APR 6 1921

THE BUILDER

A JOURNAL FOR THE ARCHITECT & CONSTRUCTOR

VOLUME CXX. No. 4077. *Seventy-ninth Year.*

FRIDAY, MARCH 25, 1921. REGISTERED AT THE GENERAL POST OFFICE AS A NEWSPAPER

PRICE NINEPENCE. *By Post* 11d. *(This Week).*

"I have seen several different forms of Mr. Boyle's 'Air-Pump' Ventilator in actual operation, and have much pleasure in testifying to their efficiency."—LORD KELVIN.

Boyle's

LATEST "PATENT AIR-PUMP" VENTILATOR.

Has DOUBLE the EXTRACTING POWER of Earlier Forms

Awarded the £50 Prize with Grand Diploma (only prize offered), at the International Ventilator Competition, London. Highest Award, International Ventilator Competition, Paris, Two Gold Medals.

"Mr. Boyle's complete success in securing the required continuous upward impulse is testified to by high authorities."—GOVERNMENT REPORT (Blue Book).

ROBERT BOYLE & SON,
Ventilating Engineers,
64, HOLBORN VIADUCT, LONDON.

"Messrs. Robert Boyle and Son, the founders of the profession of Ventilation Engineering, have raised the subject to the dignity of a science."—REPORT ON THE VENTILATION OF THE LONDON CUSTOM HOUSE.

HEATING

ROSSER & RUSSELL, Ltd.
(MAYFAIR 5210)
37 DUKE STREET, OXFORD STREET,
LONDON, W.1

HYDRAULIC LIFTS. SIMPLE. SAFE.
LONDON HYDRAULIC POWER CO.
HATFIELD STREET, S.E.1. HOP 4540

THE LIFT & HOIST Co.
Sole Makers of "Premier" Rolling Shutters.
108-114, Prince Street, DEPTFORD, S.E.

WAYGOOD-OTIS LIFTS

Offices:—54-5, Fetter-lane, E.C.4 (T.N.: Holborn 2001, T.A.: "Waygood, Fleet, London"); 62-3, Lionel-street, Birmingham (T.N.: Cen. 40 Birmingham, T.A.: "Waygood, Birmingham"). Works: Falmouth-road, London, S.E.1.

TITAN LIFTS.
THE TITAN LIFT CO., Ltd.,
20, HIGH HOLBORN, W.C. Telephone—4687 HOLBORN

STEVEN'S (A.P.S.) LIFTS
A. & P. STEVEN (PROVANSIDE WORKS), GLASGOW.
London Office: 10, Charles Street, Blackfriars Road, S.E.

LIFTS
for domestic purposes—hand-power
REVOLVING SHUTTERS
Sam'l. HASKINS & Bros., Ltd., Old St., London, E.C.1

THE EXPRESS LIFT CO., LD.
GREYCOAT STREET WORKS,
WESTMINSTER S.W.1
ALL TYPES.
'Phone: Victoria 6115 (3 lines).

EWART'S
"EMPEROR" SMOKE CURE
Cures Smoky Chimneys.
Catalogue on application.
EWART & SON, Ltd., Euston Rd., London.

ELECTRIC LIFTS
Smith, Major, & Stevens, Ltd. LONDON & NORTHAMPTON.
(Late Archibald Smith & Stevens).

PARTITION SLABS
CONCRETE BLOCKS, LTD.,
1 & 3a, Church Street, CHELSEA, S.W.3
Telephone: Kensington 90, Extn. 7.

MODELS OF WORKS BUILDINGS ESTATES etc.
Executed by JOHN B. THORP,
98, Gray's Inn Road (next to Holborn Hall),
Phone Holborn, 1011 LONDON, W.C.1

ASPHALTE WORK
RAGUSA ASPHALTE Co., LD.
TREDEGAR ROAD, BOW, E.3

PARTITION SLABS
IMMEDIATE DELIVERY.
CONCRETE SLAB CO.
WOOD LANE (*Opposite the Stadium*)
SHEPHERD'S BUSH, W. 12.

MILD STEEL ROUNDS FOR FERRO-CONCRETE
ALL SIZES.
BARS BARS BARS
PROMPT DELIVERIES FROM STOCK AND WORKS.
HELICAL BAR CO., 1, VICTORIA STREET, WESTMINSTER. S.W.1 Victoria 1940 & 1941.

PRICE & LOW Ltd.,

Telegrams: FLINTWOOD LONDON
Telephone: LONDON WALL 7753 (3 lines)

49, HACKNEY ROAD,
LONDON, E.2

STOREYARD:
118, HOXTON STREET,
LONDON, N.

JAPANESE OAK

PLAIN AND QUARTERED.

Analysis of Advertisements.

Aerated Water Machines—
Fingel & Co., Ltd.
Artificial Stone—
Brookes Ltd [Ltd.
Cambridge Artificial Stone Co.,
Concrete Units Co.
Empire Stone Co., Ltd.
Patent Impervious Stone
Stuart's Granolithic Co., Ltd.
Asbestos Tiles & Sheets—
Bell's United Asbestos Co.
British Everite & Asbestilite Works, Ltd.
British Fibroosment Works.
British Roofing Co., Ltd.
British Uralite Co, (1909) Ltd.
Machin & Kingsley, Ltd
Martinit Slate & Sheet Co., Ltd
Sankey, J. H. & Son, Ltd.
Speaker, G. R. & Co.
Turner Bros. Asbestos Co., Ltd
Asphalte—
Bradshaw's Asphalte Co. Ltd
Bradshaw, J. H.
Engert & Rolfe Ltd
Faldo's
Hobman, A. C. W. & Co. Ltd.
Limmer & Trinidad Lake Co.
Ragusa Asphalte Co. Ltd.
Val de Travers Asphalte Co.
Barrows—
Hiach. M. & Son
Mottram, G. W.
Rowland Bros.
Trolleye & Cotlis, Ltd.
Bells, &c.—
Carr, Chas. Ltd.
Gillett & Johnston
Bitumen Sheeting—
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe Ltd.
McNeill, F., & Co. Ltd.
Vulcanite Ltd.
Wales Dove Bitumastic, Ltd
Blind Cords—
Anchor Brand.
Woods Sons & Co.
Blinds (Window, &c.)—
Bryden, John, & Sons
Francis, S. W. & Co. Ltd.
Haskins, S. & Bros.
Meighan, James & Son
Williams G. A. & Son
Boilers—
Cakebread Robey & Co., Ltd.
Danks, H. & T. (Netherton),
Hartley & Sugden, Ltd.
Jenkins, Robert, & Co., Ltd.
Kinnell Chas. P. & Co. Ltd
Lumbrs. Ltd.
Bricks—
Builders' Material Association
Burley, C. Ltd.
Dennis, Henry
Lawford & Sons, Ltd.
Leeds Fireclay Co. Ltd.
Moler Fireproof Brick Co.
Rufford & Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co. Ltd.
Ward, R. G. & Co.
Young & Son
Builders' Ironmongery—
Cakebread Robey & Co., Ltd.
Cochrane, John
Hodge, Fred, Ltd.
Nicholls & Clarke
O'Brien, Thomas & Co.
Shaw & Carter, Ltd.
Van Sint Jan, Sylvain
Wilson, G. L. & Co. Ltd
Worcester Brass Co., Ltd.
Young & Marten, Ltd
Building Contractors—
Chessums, Ltd.
Higgs & Hill, Ltd.
Mansell R.
Somerville, D. G. & Co. Ltd.
Williams Howell J. Ltd.
Cartage Contractors—
Bissell, J. A.
Barley
Mears, Joseph
Castings—
Atlantis Engineering Co., Ltd.
Bayliss, Jones & Bayliss, Ltd
Haywards, Ltd.
Nicholls & Clarke, Ltd.
Young & Marten, Ltd.
Cement, Lime, Plaster—
Assoc. Portland Cement Mftrs.
British Portland Cement Mftrs.
Builders' Material Association
Burley, C. Ltd
Cement Marketing Co
Greaves, Bull & Lakin, Ltd
Kaye & Co. Ltd.
Lawford & Sons, Ltd
Martin Earle & Co.
Orford Portland Cement Co.
Sankey, J. H. & Son, Ltd.
Smeed, Dean & Co. Ltd.
Super Cement, Ltd.
Wouldham Cement Co.
Young & Son
Cement Waterproofing—
Barsan
Ironite Co., Ltd.
Pudlo
Pruflt
Sankey, J. H. & Son, Ltd.

Clocks (Church & Tower)—
Gillett & Johnston
Chimney Cowls, &c.—
Cochrane, John
Ewart & Son, Ltd.
Farmiloe, George & Sons, Ltd
Nicholls & Clarke, Ltd.
Young & Marten Ltd
Chimney Shafts—
Chimneys Limited
Danks, H. & T. (Netherton) Ltd
Furse, W. J
Concrete Houses—
Bronnert,
Concrete Units Co.
Concrete Machinery—
Armstrong & Bell
Australia Pat. Concrete Block
Builders and Contractors Plant, Ltd.
Byrd, A. A. & Co.
Chalmers-Edina Co.
Ingersoll-Rand Co.
Kirk, R. H. & Co.
Liner Concrete Machinery Co.
Martin-Harvey Co
Millars' Timber & Trading Co.
Parker, F.
Parker, Winder & Achurch Ltd.
Price & Co., Frank G.
Ransome Machinery Co., Ltd.
Stothert & Pitt
Vickers, Ltd.
Whitaker, R. G., Ltd.
Winget, Limited
Coatestone—
Coatestone Decoration Co
Concrete Piling—
Simplex Concrete Piles, Ltd.
Somerville D. G. & Co. Ltd.
Concrete Specialities—
Building Products, Ltd.
Concrete Blocks, Ltd.
Concrete Units Co.
Gloucester Concrete Construction Co., Ltd.
Helical Bar & Engineering Co
Concrete (Reinforced)—
British Reinforced Concrete
Concrete Units Co.
Expanded Metal Co., Ltd.
Fawcett Construction Co., Ltd.
Improved Concrete Construction Co. Ltd.
Indented Bar & C. Eng. Co,
Johnson's Reinforced Concrete
Lind, Peter & Co.
Patent Impervious Stone Co.
Self-Sentering Ex. Metal.
Somerville, D. G. & Co., Ltd.
Stuart's Granolithic Co., Ltd.
Stewart, J. & W.
Trussed Concrete Steel Co., Ltd
Contractors' Plant—
Anderson, Thomas & Co., Ld
Boyer, Henry
Builders and Contractors Plant, Ltd.
Builders' Material Association
Building Products, Ltd.
Byrd, A. A. & Co
Cayless Bros. (Battersea)
Lewis & Lewis Ltd
Palmer's Travelling Cradle
Parker, F. & Co.
Rom River Co., Ltd.
Rowland Bros.
Ruston & Hornsby, Ltd.
Stephen & Carter Ltd
Cranes, Excavators, &c.
Ruston & Hornsby, Ltd.
Damp Proof Courses—
Briggs, W., & Sons Ltd.
Building Products, Ltd.
Callender, Geo. M. & Co. Ltd.
Engert & Rolfe, Ltd.
Hobman, A. C. W. & Co. Ltd.
Ironite Co. Ltd. (The)
Kerner-Greenwood & Co. (Pudlo)
McNeill F. & Co Ltd
New Tylerybont Stone and Asphalte Co., Ltd.
Permanite, Ltd.
Ragusa Asphalte Co. Ltd.
Rowe & Co.
Titon (Liverpool) Ltd.
Vulcanite Ltd
Decorators' Dust Sheets—
Moore, W & Co.
Demolition—
Boyer, Henry
Cowell, A. E. & Co.
Greenham, Henry J.
Doors (Iron, Steel, &c.)—
Anderson, Thomas & Co., Ld
Bryce, White & Co.
Dennison, Kett, & Co. Ltd
Gibson, Arthur L.
Haywards, Ltd.
Hobbs, Hart, & Co. Ltd.
Lift and Hoist Co
Mather & Platt, Ltd.
Stavers & Robinson.
Van Kannel Revolving Door Co.

Door Hangers & Rollers—
Bousfield's Ironworks.
Nicholls & Clarke, Ltd.
O'Brien, Thomas, & Co.
Parker, Winder & Achurch
Young & Marten Ltd
Door Springs and Hinges—
Nicholls & Clarke, Ltd.
Young & Marten Ltd
Drawing Instruments—
Baker C.
Clarkson's.
Dressers, etc.
Bowman, M.
Crowe, G. E. W.
Electric Lamps—
Masda.
Electric Lighting & Fittings
Dalarn Engineering Co.
General Electric Co., Ltd.
Mather & Platt, Ltd
Sims & Sims
Tredegars Ltd
Troy & Co. Ltd
Underwood (Manchester), Ltd.
Engines, Mortar Mills—
Lewis & Lewis, Ltd.
Facias, &c.—
Francis, S. W & Co. Ltd.
Haskins, S., & Bros., Ltd.
Felt—
Anderson, D. & Son, Ltd.
Engert & Rolfe, Ltd.
Gibson, Arthur L.
McNeill F. & Co. Ltd.
Sankey, J. H. & Son, Ltd.
Titon (Liverpool) Ltd.
Fencing (Wood, &c.—
Ferndon Fencing Co., Ltd.
Ford, H. J.
"Invicta" Fencing Co.
Neville Hine & Co.
Rowland Bros.
Fibre for Mixing—
Woods, Sons and Co
Fire Escapes, Staircases—
Clark, Hunt, & Co. Ltd.
Davis, H. & C. & Co. Ltd.
Haywards Ltd.
Lift and Hoist Co
Fireproof Flooring, &c.—
Bell's United Asbestos Co.
British Reinforced Concrete
Building Products, Ltd. (Ferrolithic)
Dawnay, A. D. & Sons, Ltd.
Expanded Metal Co. Ltd.
Haywards, Ltd.
Homan & Rodgers, Ltd.
Ironite Co. Ltd.
King, J. A. & Co
Kleine Pat. Flooring Co. Ltd.
Moler Fireproof Brick & Partition Co., Ltd.
Sankey, J. H. & Son. Ltd.
Siegwart Fireproof Floor Co.
Somerville D. G. & Co. Ltd.
Thermex Flooring Co. Ltd
Flint Paper—
Oakey, J. & Sons Ltd.
Folding Partitions—
Educational Supply Assoc., Ld.
Lift and Hoist Co.
Thornborough & Co. Ltd.
Garden Hose—
Wilcox, W. H. & Co. Ltd.
Woods, Sons & Co.
Gates (Collapsible)—
Acme Metal Works
Bostwick Gate Co., Ltd.
Dennison, Kett, & Co. Ltd.
Haywards, Ltd.
Lift and Hoist Co
Thornborough & Co. Ltd.
Gates, Railings (Iron), &c.—
Bayliss, Jones & Bayliss, Ltd
Haywards, Ltd.
Nicholls & Clarke Ltd.
Young & Marten, Ltd.
Gates (Wood)—
Rowland Bros.
Glue (Liquid)—
Oreid
Pactel
Glue (Powder)—
Lactocol
Glass (Plate & Window)—
Borton, H. & Co.
British Luxfer Prism Synd.
Clark J. & Son, Ltd.
Eaton, Parr & Gibson, Ltd.
Farmiloe, George & Sons. Ltd.
Haywards, Ltd
King, J. A. & Co
Newton, J. M. & Sons, Ltd.
Nicholls & Clarke.
Pilkington Bros., Ltd.
Van Sint Jan, Sylvain
Young & Marten Ltd.
Glass Paper—
Oakey, J. & Sons. Ltd

Glass (Stained, Painted)—
British Luxfer Synd., Ltd.
Clark, J. & Son
Farmiloe, George & Sons, Ltd.
Gibbs, W., & Sons, Ltd.
Haywards, Ltd.
King, J. A. & Co.
Nicholls & Clarke
Young & Marten Ltd.
Glazing—
Borton, H. & Co.
Braby, F. & Co. Ltd.
British Luxfer Synd., Ltd.
Farmiloe, George & Sons, Ltd.
Freeman's
Grover & Co. Ltd.
Haywards, Ltd.
Hollivell & Co. Ltd.
King, J. A. & Co.
"Metacon" Patent Glazing
Nicholls & Clarke, Ltd.
Partridge, T. & Co.
Wetton & Son
Young & Marten, Ltd
Gutter Brackets—
Parker Winder & Achurch
Heating and Lighting
Aerogen Co., Ltd.
Central London Electrical
Clark, Hunt, & Co., Ltd.
Dunham Co., Ltd., C. A.
Ewart & Son, Ltd.
Hartley & Sugden Ltd.
Haywards, Ltd
King & Co., Ltd.
Kinnell Chas. P. & Co., Ltd
Marvin Engineering Co., Ltd.
Messenger & Co.
Murray, S. D. & Co., Ltd.
Musgrave & Co. Ltd.
Nicholls & Clarke, Ltd
Parker Winder & Achurch, Ltd.
Rosser & Russell Ltd
Self Engineering Co., Ltd.
Spensers, Ltd.
Walker, H. & Son, Ltd.
Waring, Withers & Chadwick
Young & Marten Ltd
Hot Water Supply—
Clark, Hunt & Co. Ltd.
Dargue, Griffiths & Co., Ltd.
Ewart & Son, Ltd.
Fildes, Thos.
Jenkins, Robert & Co, Ltd.
Keith, James, & Blackman
Martin Engineering Co., Ltd.
Murray, S. D. & Co., Ltd
Potterton, Thos.
Rosser & Russell, Ltd.
Hydraulic Power—
London Hydraulic Power Co.
Insurance—
London and Lancashire Fire,
Somers, R. G.
Timber Trades Mutual Accident
Ironite—
Ironite Co. Ltd.
Joinery, Mouldings, &c.—
Austins (East Ham & Ilford).
Baltic Saw Mills Co. Ltd.
Boulton & Paul, Ltd.
Bowman, M. [Ltd.
Cabinet Co. (South Lambeth),
Central Aircraft Co.
Collins & Co.
Easton & Co., A. J.
Falcon Works, Ltd.
Foulds, Arthur, Ltd.
Franks, Herbert & Co.
Gosport Cabinet & Joinery Works.
Henry, George & Co.
Heal & Son
Hobbs, W. J.
Holt, J. & Son.
Jennings, C. & Co.
Malpas Joinery Works
Middlesex Joinery Works Ltd.
Morley, E. & Sons
Newman, John, Ltd.
Ogilvie & Co.
Orfeur, C. E. Ltd.
Peacock, Chas. & Co.
Premier Joinery Co., Ltd.
Roach, H.
Slade, Geo. & Co., Ltd.
Thornborough & Co, Ltd.
Tucker, W. Duncan, & Sons
West Heath Joinery Works.
West London Timber & Moulding Co. Ltd.
White, John P. & Sons, Ltd.
Jointless Flooring—
Bell's United Asbestos Co.
Brentford Construction Co.,
British Bolement Co. Ltd
Durate
Ebner, J. F.
King, J. A. & Co.
Linolite Composition Co.
Thermos Flooring Co. Ltd.
Walker, Chas. & Co.
Wilfier Co. Ltd.

Ladders—
Acme Patent Ladder Co.
Cayless Brothers (Battersea).
Drew, Clark & Co.
Finch, M. & Son
Lawford & Sons, Ltd.
Parker & Co
Stephens & Carter
Thomas, H. Johnston
Trolleye & Cotlis, Ltd.
Laundry Appliances—
Bradford, T. & Co. Ltd.
Letters, &c.—
Francis S. W. & Co Ltd.
Lead, Oil, Colours, Size, &c
Builders' Material Association
Farmiloe, G. & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Girdler, J. & Co.
Hodge, Fred, Ltd.
Nicholls & Clarke
Titon (Liverpool) Ltd.
Young & Marten, Ltd.
Lifts, Hoists, Cranes, &c. —
A. & A. Electrical Co. Ltd.
Bryden John, & Sons
Dennison, Kett & Co., Ltd
Express Lift Co., Ltd.
Gimson & Co. (Leicester) Ltd.
Haskins, S. & Bros. Ltd.
Lewis & Lewis, Ltd.
Lift and Hoist Co.
Medway's
Smith, J. Bardell, & Co.
Smith, Major & Steven, Ltd.
Steven, A. & P.
Titan Lift Co. Ltd.
Vaughan Crane Co., Ltd.
Waygood-Otis Ltd.
Lightning Conductors—
Furse, W. J.
Locks, Latches, &c.
Hobbs, Hart & Co. Ltd
Nicholls & Clarke, Ltd
Shaw & Carter, Ltd.
Young & Marten Ltd.
Machinery— [Ltd.
Anglo-Hollandia Machineries,
Johnson C. H. & Sons. Ltd
Jonsered's London Agency
Parker, F.
Marble— [Ltd.
Art Pavements & Decorations,
Bomert, Teves and Blankley
Ebner, J. F.
Kelly & Co
Manu-Marble Co.
Moore, M. & E.
Walker, Chas. & Co.
Webb, Percy C., Ltd.
Metaforms—
Byrd, A. A. & Co.
Metal Casements—
Avis, W. A.
British Luxfer Syndicate, Ltd.
Crittall Manufacturing Co.
Ribertos & Williams,
Farmiloe, George & Sons Ltd
Gibbons, Jas., Ltd.
Haywards, Ltd.
Nicholls & Clarke Ltd.
Oldaker, W. & J. H.
Standard Metal Windows Co.
Young & Marten, Ltd.
Metal Work—
Marshall, E. R. & C. Ltd.
Shrivell, Wm., Ltd.
Thornborough & Co., Ltd.
Model Makers—
Partridge, L. H.
Thorp, J. E.
Mosaic Work—
Brookes, Ltd.
Ebner, J. F.
Jackson, Geo F.
Maw & Co. Ltd.
Moore, M. & E.
Motor Vehicles. Transport.
Keith & Boyle (Ldn.), Ltd.
London & Midland Motors, Ld
Mann's Pat. Steam Cart and Wagon Co.
Slough Trading Co., Ltd.
Taylor, Harry & Sons, Ltd.
Tilling, Ltd.
Tuke & Bell, Ltd.
Paints, Stains, Varnish—
Aspinalls, Ltd.
Berger, Lewis, & Sons, Ltd.
Blundell Spence & Co., Ltd.
Builders' Material Association
Clark, Robt. Ingham & Co. Ld.
Cory, Horace & Co., Ltd.
Cuirass Products, Ltd.
Dixon's White, Ltd.
Farmiloe, George & Sons, Ltd.
Farmiloe, T. & W. Ltd.
Gay R. & Co., Ltd
Gelatinous White Co.
Nicholls & Clarke, Ltd.
Nobles & Hoare, Ltd.
Rose, Sir A. W. & Co., Ltd.
Sankey, J. H. & Son, Ltd.

Silicate Paint Co.
Stephens, H. C.
Titon (Liverpool) Ltd.
Van Geelkerken & Co., Ltd.
Vitrolite Construction Co. (Europe), Ltd.
Wilson, G. L. & Co.
Young & Marten Ltd.
Parquet Flooring—
Artistic Flooring and Decorating Co
Damman & Co.
Ebner, J. F.
Turpin's
Walker, Chas. & Co.
Partitions, Slabs, &c.—
British Uralite Co. (1909)
Builders' Material Association
Concrete Blocks, Ltd.
Concrete Units Co.
Educational Supply Co. Ltd.
Expanded Metal Co. Ltd.
Jones, Fredk. & Co. Ltd.
King, J. A. & Co.
Lawford & Sons, Ltd.
Muribloc (Partition Slabs), Ltd.
Sankey, J. H. & Son Ltd.
Thames Mills
Wright, J. & Co.
Pavement, &c., Lights—
British Luxfer Prism Synd.
Haywards, Ltd.
King, J. A. & Co
Picture Cords—
Anchor Brand
Woods, Sons & Co
Pipe Yarns—
Woods, Sons & Co.
Pumps, Pumping Engines
Barclay, James
Boulton & Paul, Ltd.
Braby, F. & Co. Ltd
Phœnix Engineering Co Ltd.
Pulsometer Engineering Co
Willcox, W. H. & Co. Ltd.
Rawlplugs—
Rawlplug Co.
Rooflights—
Braby, F. & Co. Ltd.
British Luxfer Prism Synd.
Roofing Compounds—
Baxendale & Co., Ltd., "Texo."
Callender, Geo. M. & Co., Ltd.
Cuirass Products
"Faretex."
Titon (Liverpool), Ltd
Reparo, Ltd.
Roofing (Felt)—
British Roofing Co. Ltd.
Certain-teed Products
Cuirass Products, Ltd.
McNeill F. & Co. Ltd.
New Tylerybont Stone and Asphalte Co., Ltd.
Vulcanite Ltd
Roofings (various brands)
"Alligator" (British Roofing Co. Ltd.)
Certain-teed Products
"Challenge" (Briggs & Sons)
"Lion" (F. McNeill & Co.)
"Rok" (D. Anderson & Son, Ld
"Ruberoid" (Ruberoid Co. Ld)
"Titon," Titon Ltd.
"Vulcanite" (Vulcanite Ltd)
Roofs (Zinc and Copper)—
Braby, F. & Co. Ltd.
Ewart & Son, Ltd
Ropes (Fall and Scaffold)—
Brown, J. H. & Co.
Bullivant & Co., Ltd.
Woods, Sons & Co.
Safes—
Hobbs, Hart, & Co. Ltd.
Tann, John Ltd.
Sand, Gravel, &c.
Bennett, John
Boyer Henry
Concrete Units Co.
Hoddesdon Sand Pits, Ltd.
Lawford & Sons, Ltd.
Sankey, J. H. & Son, Ltd.
Stanwell Silica Co., Ltd.
Stokes, J. W. G.
Sanitary Appliances and Ware—
Andrew & Nanson
Builders' Material Association
Burn Bros.
Cakebread Robey & Co., Ltd.
Doulton & Co. Ltd.
Emanuel, A. & Sons, Ltd.
Farmiloe, George & Sons Ltd
Haywards, Ltd.
Jennings, Geo., Ltd.
Leeds Fireclay Co. Ltd
Macfarlane, W. & Co.
Nicholls & Clarke
Rufford & Co
Sankey, J. H. & Son, Ltd.
Sessions & Sons, Ltd.
Thames Bank Iron Co, Ltd.
Young & Marten Ltd
Sash Lines, Cords, &c.—
Anchor Brand
Brown, J. H.
Woods, Sons & Co.

GEO. SLADE & COMPY., LTD.

SOLICIT ENQUIRIES FOR

JOINERY FOR HOUSING SCHEMES

SPECIAL DEPARTMENT

LONDON MADE DOORS
From 20/- each.
STAIRS 20/- TREAD.

FOR OFFICE FURNITURE.

OAK PANELLING £1,000 PER MILE.

BARNSBURY PARK, LONDON, N.1. Tel.: North 199.

THE BUILDER

A JOURNAL FOR THE ARCHITECT AND CONSTRUCTOR.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

VOL. CXX.—No. 4077. MARCH 25, 1921.

ARTISTIC CONTROL.

WE briefly referred in our last issue to the articles by a special correspondent of the *Times* based on the views of certain eminent Royal Academicians on the nation's responsibility in "the domain of beauty," and, as these views include suggestions for "guarding and extending that domain," it will be well to consider them at greater length. The names of the artists who have made our contemporary the mouthpiece of their opinions are not given, and we are told that before they opened their lips they laid down the condition that no names should be mentioned, as they dreaded the suspicion of self-advertisement, while they considered their scheme good enough without their authority. Now, the suggestions of these eminent artists are well worthy of consideration, and they have, in one form or another, been made again and again, but we think the authors of this new movement are entirely mistaken in putting their views before the public in this way. They would have done much more for the causes they and most of us have at heart had they been less modest and had backed their opinions by their names, and made a wider appeal to the public than they have through the columns of our contemporary. The principles involved are too important and concern too many people to be limited to discussion in any one journal, and however much the public may respect the motives of these eminent men, we think they will be inclined to question this manner of dealing with issues of such far-reaching importance, and may even be doubtful whether suggestions put forward in such a tentative way can really be the serious convictions, as we believe they are, of artists well qualified to speak.

The importance of the matter will be realised from the following features, as set out in our contemporary :—

"1. The preservation by the Government of the finest specimens of British sculpture of all periods in the United Kingdom; and the foundation of a museum, like the Trocadero in Paris, of casts of English carving, modelling, bronze work, &c., whereby a vast amount of irreplaceable art, which otherwise will have disappeared in 100 years under the ravages of time, would be saved.

"2. The formation of a Committee of Taste, consisting of painters, sculptors, and architects, irrespective of such bodies as the Office of Works and the Westminster Borough Council, who should consider sites for statuary, fountains, public shelters, seats, and kiosks.

"3. The formation also of a Standing Committee of Designers, to be consulted in street decoration of Greater London on occasions of national and Imperial importance. The advice of this committee would be at the service of the Lord Mayor-elect of London in fresh and beautiful schemes for his progress through the streets.

"4. Any innovations for the beautifying of national feasts and ceremonies would be described by the Committee of Taste for the benefit of the public—to tell them of their character and show them their practicability.

"5. The execution by eminent artists, aided by their students, of frescoes in important public buildings, and the fostering of the cult of bright and luminous colour in such undertakings.

"6. The alteration of proportions and improvement of design in such street objects as lamp-posts, letter-boxes, sand-bins, railings, posters, the ground-floor elevation of publichouses, public bridges, flashlight advertisements, and in the dressing of shop windows."

In so far as these suggestions are an implied condemnation of our present-day go-as-you-please methods in selecting sites, in arranging street decorations, in the design of lamp-posts and similar objects, and in other ways, we are in complete accord, as well as with the desire of all artists and people of good taste to improve on these methods and raise the standard of design not only in street planning and town architecture, and these public services, but in the common objects of daily use. The value of good architecture in the education of public taste is admitted, while, in regard to the general application of art to towns and cities, Mr. R. Anning Bell, Professor of Design at South Kensington, puts the case well when, in speaking of the value of decorative art to a well-ordered city, he says: "Then comes the question of how to get enough of it—and how to get a good quality of it. Enough of it—too much, indeed—can be got by merely paying for it, but to get a good quality is a much more difficult undertaking. It means finding and educating good artists to do the work. But before that it means finding the right men *to* find the right artists."

Professor Bell, while making minor criticisms of the suggestions—especially as to putting works of art into museums and galleries, instead of taking them to the public—a criticism with which we agree—goes on to say: "The choice of the artist is left to individual whims or to a body of well-intentioned men without special knowledge of the subject. That is where your Committee of Taste should come in. If a body could be formed without officials, and not exclusively composed of artists, 'to find the right artists,' a very great problem would have been solved. The question still remains, 'Who is going to form the ideal Committee which is going to find artists and teach them to do good work?' As soon as that question is answered we can really look forward to the renaissance of the appreciation of art."

From which it will be seen that Professor Bell realises at least one of the difficulties inherent in the suggestions, and Mr. Carmichael Thomas, Chairman of the Executive of the London Society, also notes one of the dangers of this reliance on experts when, after referring to the "endless opportunities for the services of a committee of experts," he says "I do not think, however, that its powers should be extended too far, since if all designs had to be laid before a committee of even the most eminent men they would emerge shorn of all individuality, character and value. Our greatest architects and artists could never have executed their masterpieces if a dozen serious gentlemen had been charged to eradicate all the faults with which they were so happily endowed."

These criticisms indicate the danger inherent in the proposals, which are the expression in another form of the desire for a Ministry of Fine Arts—a desire which at first sight appears to offer so much, but which—especially with our recent increase of knowledge of the way officials and departments act, would, we believe, give us so little. The fact is that this very natural desire on the part of artists and those who wish to see our towns and cities and the things of everyday use made beautiful appears to have led them to make these proposals without realising that while a Committee of Taste might, and probably would, be of help in giving advice to public bodies on such matters as street decorations for public celebrations, the position of statues and monuments, etc., it is not the only way to deal with the problem, and may, in fact, be of little avail if we do not take other steps as well "to broaden the domain of art." Our hope lies in the proper training and encouragement of the producers of art, whether they be architects, sculptors, town-planners, craftsmen or manufacturers, and the difficulties of any Committee of Taste would be insurmountable if the problem is not first dealt with at the source. In regard to things of common use, the need is for an amalgamation between artists and producers, so that the public, who take what is provided for them whether it is good or bad—though they generally select the bad because it is cheap and is adorned with some meretricious ornament—may be supplied with a better class of work. The way to "broaden the domain of art" is to encourage the producers of good work by every means in our power, and especially by training them to do it, and by using it when it is produced, rather than by entrusting to a Committee of Taste the invidious task of deciding after it is produced whether work is good or bad. As we said recently, there is an instinctive and quite rightly felt distrust by artists of experts and advisers, and if there were more respect for the artist, there would be a remedy found, and one near at hand.

We do not wish to imply that the suggestions made by these eminent artists are not to be welcomed, and will do no good. On the contrary, they indicate a growth of opinion and a unity of purpose which should be encouraged if only to stimulate thought and inquiry, but while we gladly call attention to them we also suggest that it is in the proper training of men to produce good work and in the encouragement of those who do that we may expect the best and speediest results.

NOTES.

Architectural Conferences in the Provinces.

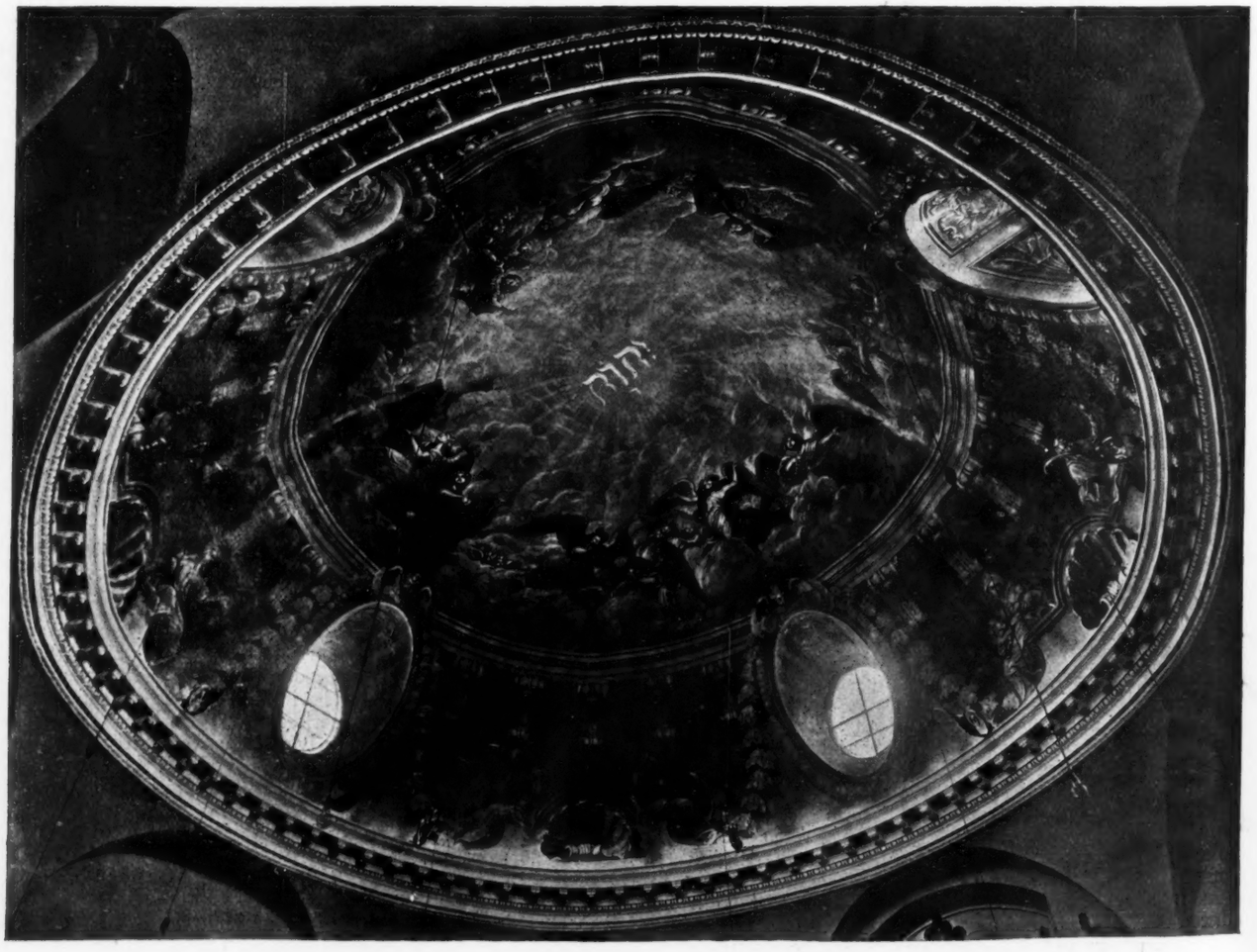
FORMERLY architectural conferences were regularly held in provincial centres, and the Council of the Royal Institute of British Architects has, we are glad to note, decided to revive the practice. The first of the conferences will be held in Liverpool on June 23, 24 and 25. The Liverpool Architectural Society has offered to act as hosts and to make the necessary arrangements, and we hope the meeting will be a success. The object of these conferences is to bring provincial members into closer touch with their fellow members in London, and a large attendance is expected. A detailed programme will be issued later.

The City Churches.

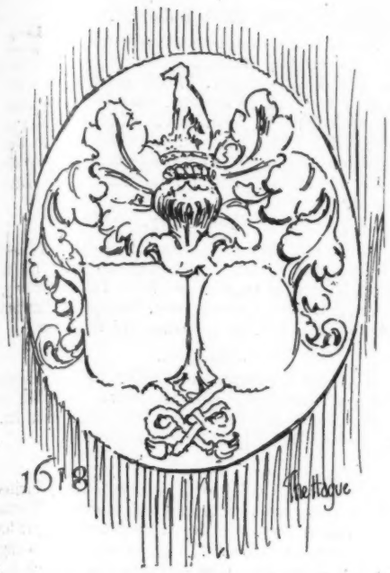
WE give on another page a memorial on the subject of the nineteen City churches, the demolition of which was proposed by the City of London Churches Commission, 1919. The memorial is signed by the President of the Royal Academy and others representing twelve societies or institutions which very properly nominated representatives to consider the extraordinary proposals of the Commission, and whose reasons against the recommendations are set out in a temperate and yet convincing way, and should bring home to anyone the unwisdom of the recommendations. The reply of the Bishop of London is also given, but while we are glad to note that "no wholesale demolition of nineteen City churches is contemplated," we must not forget that it was just this wholesale demolition that was recommended, and rightly objected to by all who have an affection for these monuments of the past and who think the removal of these churches would be a blunder that would react upon the Church itself. The Bishop says that "some few" of these churches "may eventually have to be pulled down or removed," but we hope the twelve societies and the citizens of London will resent all such intentions, and that even these "some few"—whatever that may mean—will be spared.

Artistic Control.

THOUGH welcoming the *Times* correspondence on art, which follows very recently after one of a similar character in the *Morning Post*, and while glad to see a certain growth of public interest in the matter, we are yet left with the unsatisfactory sense of a want of sufficient realisation of the means for bringing art more into the life of the nation. For what so far do these proposals amount to, beyond the formation of further public bodies to elevate the public taste? Elect persons are to guide us, and when the services of an artist are required they will advise us to whom to go. We seem to remember that already a multitude of bodies, amongst them the Royal Academy, the Society of Sculptors, and others, have been solicitous to undertake this task. A cautious public has not been too ready to entrust their judgment wholly to these elected persons. Are not all these proposals now put forward too much coloured with this claim of preferential taste, with the old precedencies? They still wear the somewhat faded look of old experience pursuing the old paths. It is not that we deny the need, but there has to be a break with the old methods and a realisation that the present time is calling for a new outlook. So that while we welcome the recognition of the need for change it will none the less be very



Painted Dome, by Sir James Thornhill, at St. Mary Abchurch. (*See p.* 365).



[The endless variety of intensely decorative designs in low relief heraldic carving which is to be found in Holland is illustrated by this example, sketched some little time since at the Hague.]

necessary to be watchful in regard to these proposals, in order that this plea for beauty may not degenerate into a further entanglement of art.

The Democratisation of Art.

THERE lies in these proposals too much of the old assumption that the average man, that public opinion, must be converted from its philistinism by the taste of superior persons. We think rather that just as it has been said that the ordinary man won the war, so if we could free him more fully for the effective exercise of his own judgment on art matters, he might help us to win the case for beauty. A great change is foreshadowing itself, which encloses new interpretations for art, and the time has come when we must, if art is to be brought more into the life of the nation, give full recognition to the complications such change foreshadows.

Art and Trades.

THE letter from a correspondent on "The Furniture Trades and Art," enforces a view in regard to the working of the art schools which is of importance at the present time. His suggestion that the Government should "divert a large portion of the money now allotted to a bureaucratic teaching of art to awarding commissions from the State direct to the manufacturers" is one for which there is much to be said. At the same time such commissions should certainly reach those independent craftsmen who are most in need of this encouragement of the State, as well as the manufacturers; and care would have to be taken that such expenditure was wisely directed, and in good hands. We call attention to the last paragraph in the letter of our correspondent, which deeply needs saying.

Old Temple Bar.

THOUGH we regret the refusal of Admiral Sir Hedworth Meux to agree to a suggestion of the London Society for the removal of Old Temple Bar from Theobald's Park, Waltham, to a site on the Embankment, we are not surprised that he should have adhered to his previous refusals. He reminds us that in 1878 Temple Bar was pulled down and dumped into Farringdon-road. In 1887 it was necessary to clear Farringdon-road, and the City of London gave Temple Bar to Sir Henry Bruce Meux, in order that he might re-erect it at one of the entrances of Theobald's Park, he agreeing to pay all expenses connected with the removal of the material and the erection of the Bar. These expenses amounted to many thousands of pounds. "Whatever the actual amount may have been," he says, "no sane person can doubt that the intention was to establish the Bar in a permanent resting place. Thus Sir Henry and Lady Meux, in rescuing Temple Bar, also enriched and beautified their property by providing Theobald's with the most interesting entrance-gates of any private residence in England." It was a short-sighted policy on the part of those who dumped old Temple Bar into Farringdon-road and then disposed of it in the way they did; but they did so, and now we regret it. This should be a lesson to those who are willing to sacrifice any of our City churches.

Indoor Relief for a Qualified Architect.

WE wonder why at a recent meeting of a Board of Guardians a member asked for the deletion of a minute of the Institution Committee, recommending that an inmate of the workhouse who was a qualified architect be asked to prepare specifications for a new bathroom, etc. The Chairman also wondered why, and because the member would rather not say the matter was referred back. We hope this does not mean that the inmate who is an architect will lose the job, as here appears to be another chance to save a few pounds of the ratepayers' money, besides giving some useful work to a member of a much-harassed profession!

Möllen, Elsinore, Denmark. MR. W. D. CABOE, F.S.A., Architect. (*See p.* 375).

GENERAL NEWS.

Health Week.

The Secretary of the Health Week Committee, appointed by the Royal Sanitary Institute, announces that H.M. the King and H.M. the Queen have again graciously accorded their patronage to "Health Week," which will be held this year during the month of October.

Cardiff as a Commercial and Industrial Centre.

The Development Committee of the Cardiff City Council has issued an illustrated booklet under this title, showing how advantageously that city is situated in regard to industrial and commercial development, and how, as a shipping port, it stands out predominant amongst the ports of the world, while in the importation of timber it ranks amongst the first three in the United Kingdom, shipments being received from the Baltic, White Sea, Scandinavia, Canada and the South of France.

Dilution in the Building Industry.

At the annual meeting of the Mansfield Branch of the National Federation of Building Trades' Employers last week, it was unanimously resolved to confirm the resolution of the Special Executive Council in support of the Government appeal for 50,000 ex-Service men being taken into the industry. It was stated that many skilled men left the building trade during the war period and went into coal pits in the district, and remained there. Many of them were putting in four shifts at the pits and filling in the rest of the week building.

Borough Polytechnic Institute.

The annual exhibition of day and evening students' work at the Borough Polytechnic Institute, Borough-road, S.E., was held on Saturday last week, when the workshops and classrooms of this busy place were thrown open to the public. The exhibits, from elementary to advanced stages, testify to the excellent character of the instruction given and the desire on the part of the large number of students attending the classes efficiently to equip themselves for their business in life. The architectural drawings, building construction, carpentry and joinery, and many other allied subjects covering a wide range, show careful attention to detail. Amongst a vast number of other exhibits the photographs, some of which are prize-winners in competitions held in connection with the Institute, are fine examples of the "enlarging" work done in this section.

London University Site.

The Chancellor of the Exchequer, in a written reply to a question asked in the House of Commons, states that no decision has been made on the question of the period during which the Bloomsbury site is to be kept for the new buildings for London University. The agreement with the vendor contains a clause under which if, before April 1, 1926, the Government gives notice that it finds it impossible to use the property for the purposes of the University, the vendor has an option to re-purchase it for the price given, and if he does not exercise the option the restriction of the use of the site for purposes of the University is removed. During the period of waiting the property will be administered in its existing form, and in the improbable event of the abandonment of the scheme it will be for the Government of the day to determine whether to dispose of the site or devote it to other purposes.

The British School at the National Gallery.

Several additions have been made lately to the collections at the National Gallery, Trafalgar-square. The most important is Constable's famous picture of "Salisbury Cathedral from the Meadows" (The Rainbow), painted in 1831 and well known to the public through the large mezzotint by David Lucas. The painting, which has rarely been seen in public, has been deposited on loan for a short time by Lord Ashton of Hyde, and is hung in Room XXII, between "The Cornfield" and "The Cenotaph." In the same room has been placed an oil study of trees, probably painted about 1809, in Duncombe Park, Yorkshire, by John Sell Cotman. The picture was purchased recently from Walker's Gallery out of the Mackerell Fund. Crome's "Windmill" will shortly be leaving Room XXIV for Norwich, where it will form part of the Crome Centenary Exhibition. In Room XXV are two of the series of pictures painted by Joseph Highmore to illustrate Richardson's "Pamela."

COMPETITION NEWS.

East Ham Hospital.

The award in the East Ham War Memorial Hospital Competition has been made by the assessor, Mr. George Hubbard, F.S.A., F.R.I.B.A., as follows:—

(1) Messrs. F. E. Mennie and C. B. Smith, 214, Bishopsgate, E.C.

(2) Mr. H. T. Wright, The Grove, Gosforth.

(3) Messrs. F. M. Cook & W. M. Twist, 83, Colmore-row, Birmingham.

Lockerbie.

The assessor, Mr. G. Washington Browne, R.S.A., has placed the design of Mr. James B. Dunn, A.R.S.A., first in the Lockerbie War Memorial Competition.

City Bank Buildings.

The London County and Westminster Bank has chosen the plans for a new building on its site in Lothbury. Four architects were invited to send in designs, and the successful competitor is Mr. A. J. Davis, of Messrs. Mewes & Davis. The new building will be in the Palladian style. The complete designs provide for a nine-floor building, including two basements.

Queensbury.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, to cost about £800. Further particulars from the Secretary, Council Offices, Queensbury, Yorks. (Banned by the R.I.B.A. and Society of Architects.)

Bognor.

FOR THE ADVERTISING COMMITTEE.—Designs for a poster advertising the town. Sending-in date, March 31. Further particulars from Mr. J. Jubb, 68, High-street, Bognor.

Chauny.

The Municipality of Chauny (Aisne) invites plans from architects and engineers in France and Allied Countries for (1) a water supply for the town, and (2) a drainage system. Sending-in day, June 10. (See our issue for March 11.)

Licensed House Competition.

The exhibition of the designs submitted in the Brewers' Company's competition for a licensed house will re-open at the Royal Institute of British Architects (9, Conduit-street, W.1) on March 30, and close on April 2.

The design which obtained the second place in this competition is the work of Mr. C. H. James, A.R.I.B.A., of Messrs. Hennell & James.

Renfrew.

FOR THE WAR MEMORIAL COMMITTEE.—Designs for a war memorial, to cost up to £1,200. The author of the design placed first will receive the commission to carry out the work, and a second premium of £10 will be awarded. Sending-in day, April 9. Further particulars from Mr. A. R. Harper, Town Clerk, Renfrew.

Members of the R.I.B.A. and the Society of Architects are requested not to take part in this competition until the conditions have been revised.

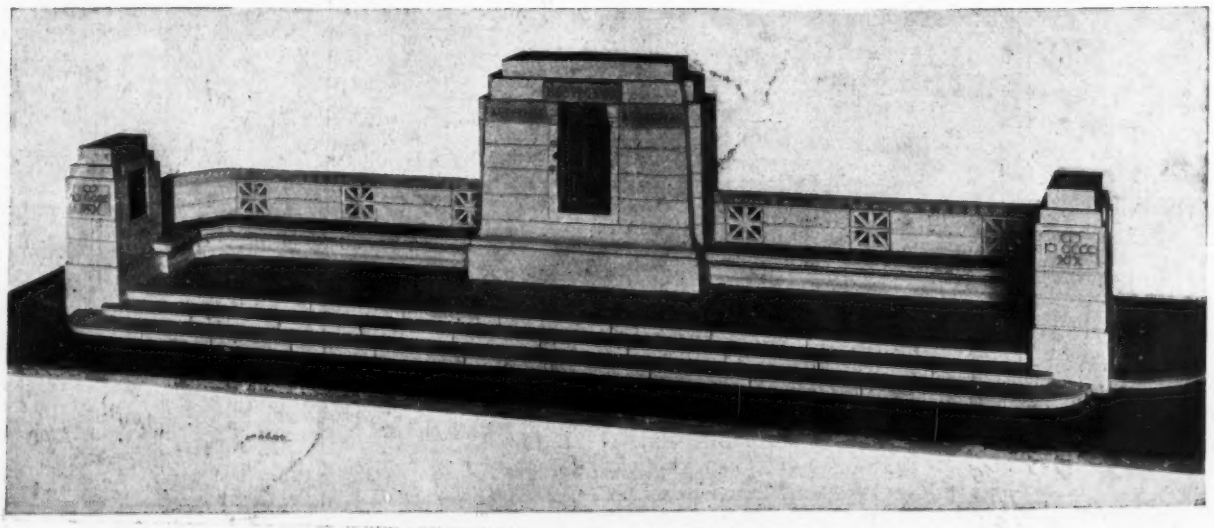
Other Competitions.

Other competitions still open include Glasgow War Memorial, March 31; Campbeltown, April 8; Rothesay (banned by R.I.B.A. and Society of Architects), March 26.

MEETINGS.

THURSDAY, *March* 31.

Concrete Institute.—Mr. S. Bylander on "Stresses in Structural Steel." At 296, Vauxhall Bridge-road, S.W. 1. 7.30 p.m.



Lincoln's Inn War Memorial. MR. JOHN W. SIMPSON, P.R.I.B.A., Architect.
[This Memorial was unveiled on Wednesday last week.]

CORRESPONDENCE.

The Architect and His Assistant.

Sir,—Perhaps you will allow me to reply briefly to Mr. McArthur Butler's letter in your issue for March 11. I can assure him I had in no way overlooked the pioneer work of the Society of Architects in its fight for statutory registration.

But will registration entirely rectify the alleged uneconomic state of the architectural profession, a state which will not allow of its practitioners affording their assistants a decent wage? We will surely have to seek further for that remedy.

Registration may, as Mr. McArthur Butler suggests, "put a check upon the flow of unsuitable candidates into the profession . . . . and thereby minimise overcrowding." Let us hope so, and *press on* with the good work. So far as the assistants are concerned, however, registration as it is, I believe, generally comprehended will do little to improve their economically deplorable position amongst the workers, black-coated or otherwise. And to my mind it behoves the professional societies to consider for inclusion in any registration Bill, equally, or at least commensurate with those reforms proposed for the benefit of their practising members, clauses designed to meet and safeguard the undeniable claims to improved status and well-being of that large percentage of their members who may *only* be assistants.

John B. Hector,
Vice-Chairman, Central Executive Council, A. and S.A.P.U.

The Furniture Trades and Art.

Sir,—It was my misfortune, owing to my being so far from the speaker when Sir Charles Allom read his paper at the Furniture Trades' Convention, to be unable to follow him entirely in his reference to the influence the teaching in the art schools in the country had on the manufacture of furniture, but his argument, as far as I could gather, was unfavourable.

If my surmise is correct, I am in complete accord with him. I think far greater results could be obtained for manufactures in this country, and especially for those connected with the industrial arts, if the Government diverted a large portion of the money now allotted to a bureaucratic teaching of art to awarding commissions from the State direct to the manufacturers. These purchased works could then be placed throughout the country in museums as standard works, could be national gifts to foreign states, or to the governments of the Dominions, serving a twofold purpose of making known British industrial art while serving as tokens of international friendship.

Such action on the part of the Government would go far to induce the manufacturer to realise that the artist was an absolute necessity to the welfare of his business; his efforts to create a fine standard would meet with a recognised financial result; the exposition of his creations would develop an advertisement of the highest character for the firm; and, finally, such a policy would tend to bring back the training of the youths to the workshops—the only place, in spite of what theorists may say, where the education of the man who aspires to be an artist in his craft can really take place.

This is a policy the manufacturer can understand. It develops before his eyes. It touches his pocket. It rewards him financially. It enables him having ideals to pursue them without bearing too heavily upon him with their financial responsibilities. He receives the prize for his courage.

For the nation such a policy as I have indicated will bring trade, and after all it is not such a new trade policy.

The rulers of France in the past, with sure insight into the fruits of such a policy, built up industrial art as a sound source of wealth. Colbert, the great French Minister, a real statesman who laid the foundation of the wealth of Paris to-day, knew it and foresaw the possibility. Napoleon never lost sight of it in spite of all the great tasks he set himself. The rulers of France to-day are true to the tradition. They commission the artists in the industrial arts, and they honour foreign States with the presents of these artists' accomplishments. The rulers of France by these commissions bring a reputation to artists who make France their home, and by enabling these artists, French by birth or by adoption, to give practical shape to their wonderful conceptions and visions; they are content that France should have the credit for being the home for all those things which satisfy the eye with beauty and make for the comfort of our surroundings.

I suggest this policy to those who by their acumen or by force of circumstances are placed in positions which, while giving power, demand a practical account of their stewardship. Such positions carry responsibilities other than those of their own personal prosperity.

Walter Gilbert.

"A Land for Heroes."

A letter by Mr. Thomas Foster, of Burnley, dealing with the question of dilution in the building industry and our obligations towards demobilised soldiers, and in reply to Mr. Bryant Newbold's communication in our last issue, is given on p. 386

Other letters are unavoidably held over until next week.

ST. MARY ABCHURCH, E.C.

Discovery of Painted Dome.

Threatened with destruction, owing to the badly worm-eaten state of the supporting timbers, the dome of St. Mary Abchurch, Abchurch-lane, E.C., has been saved from collapse by the timely work of restoration by Messrs. George Hubbard & Son, architects, of Fenchurch-street, E.C. On Friday last week a party of antiquarians and architects gathered to view the painted dome by Sir James Thornhill, which has been discovered during the renovations. The dome, an illustration of which we give on p. 366, was lighted by 110 electric lamps with reflectors, which have been placed around the base and concealed behind the great projecting cornice.

The artist has portrayed in the first, or lower, range, between the lucarne lights, the heavenly virtues and graces, shells and festoons of heavy wreaths, above which is painted a winged cherubic choir and others of the heavenly hosts adoring the divinity, depicted by a light radiating from the centralised Hebraic characters, the sacred sign of Jehovah. The painting is in the French decorative allegorical style in vogue about 1700. The church, which was completed by Wren in 1686, contains work by Grinling Gibbons and others; it stands on the site of an earlier Gothic structure, the date of which has been traced back to the thirteenth century, and which took its name from the priest, Robert Abchurch.

The contractors for the renovations are Messrs. Fredk. Smith & Co. (Builders), Ltd., of 9, Bush-lane, Cannon-street, E.C

Dragon-tie in the Dome of St. Mary Abchurch, showing decayed condition.
Messrs. George Hubbard & Son, Architects for the Restoration.

Mr. G. Gilbert Scott (President) occupied the chair at a general meeting of the Architectural Association on Monday last.

Election of Members.

The following, including twelve elected at a Special General Meeting on March 15, were unanimously elected as new members :—

R. H. Parry.	J. W. Harland.
M. S. Arcas.	E. W. Roberts.
Thomas Wallis.	H. D. Pearson.
H. J. Thompson.	L. Wilson.
C. St. G. Miller.	C. C. Lowe.
L. J. Young.	H. E. Jackson.
H. A. Newton.	J. C. L. Glover.
R. M. Walker.	E. J. C. Holloway.
D. A. G. Smith.	J. Noyce.
C. W. Jackson.	A. P. Lay.
W. Brown.	

Nominations for House List.

The following were nominated to serve as officers of the Association for the Session 1921-22 :—

President : Mr. W. G. Newton, A.R.I.B.A.
Vice-Presidents : Mr. F. C. Eden, M.A., and Mr. E. Stanley Hall, F.R.I.B.A.

The Building Guilds.

Mr. Malcolm Sparks (Secretary, London Guild of Builders) addressed the meeting on "The Rise of the Guild of Builders," in the course of which he said at a time when the capitalist system was breaking down all over the world it was particularly desirable that the new system should be examined by everybody, especially by architects, as the first steps in the Guild movement were being taken in the building industry. He believed they had begun on the right lines, and that they had not made the mistakes that had been made in the past. The greatest idea in the world to-day was the idea of industry as an organisation for the public service ; it seemed to stand out like a search-light across all the chaos that existed at the present time, and the building industry was leading the world in that respect. It was a change of motive that was very important, and he believed the building industry was going to get the system into operation on a scale which would give an opportunity to say whether it was workable or not. The purpose of industry was the very elementary one of supplying the people with the things they needed, but the astounding thing was that industry had never been organised for that purpose. Up to now industry had been largely organised to produce dividends, but the Guild set out to give service, not to get it.

The Guild idea had captured the trade union movement of the world, and the trade union movement had changed its direction. The Building Guilds in this country had now obtained contracts amounting to over £3,000,000, of which over £1,700,000 was in London.

They hoped to set up a National Committee, which would be registered as a legal entity, and the duties of which would be to purchase material, to arrange for insurance, to arrange for credit, to carry out research, and so on ; it would centralise everything that should obviously be centralised, and nothing more. The National Committee would not build houses.

A criticism often levelled at the Building Guild was that it was planning a great trust or combine that would bleed the community to death. But the Guild would be a combine of self-governing communities with labour in control, and with capital in subjection ; capital would be the hired equipment of the job, hired at a fixed rate of interest. It would ensure that the advantages of industrial combination would be secured for the public.

The next type of Committee, of which London was the first fully developed example, was the Regional Committee. That was also registered as a legal entity, whose members were elected by the trade unions and functional organisations in the area in which it operated. The Regional Committee acted as the contractor, and had power to sign contracts and do everything which a first-class contractor did.

The third type of Committee was the Area Committee, which was composed in exactly the same way as the other Committees. Its chief function was to supply labour within its area. The Area Committees were represented on the Regional Committees, and the Regional Committees would be represented on the National Committee. On the Walthamstow and Greenwich contracts the Area Committees were carrying out the function of supplying labour very efficiently, and the London Regional Committee was doing the rest.

The three great objects of the Guild were : (1) Control by the rank and file. The system had been in operation for eight months, and had proved that the personnel of the Guilds contained all the technical and operative services necessary for carrying out building work. If those services could not be obtained from within the industry itself, from whence were they to be obtained ? (2) The idea of continuous pay. The old system of paying labour when it was wanted and putting it off when it was not wanted had to be put aside. Human beings should not be regarded as a commodity, like timber or bricks. The Guildsmen would be on the strength of the Guild, and would draw Guild pay whether working or not ; they would be either on the working strength of the Guild or on reserve, and they would be paid during wet weather. (3) In no case would the surplus earnings of the Guild be paid out as dividends. The surplus would be put to reserve for the improvement of the service, not only in equipment but also in technical research, which would be undertaken through the National Committee.

The Guild system would help to revive craftsmanship to an extent which had not been seen since the Middle Ages. Such a system would provide the best possible craftsmanship.

The relationship of architects to the Guild was interesting, because the architect was the first technician in the industry, and should obviously be part of the Guild.

The Guild housing contract created an alliance between the Guild and the Co-operative Wholesale Society, which supplied materials, and the Co-operative Insurance Society, which guaranteed the performance of the contract. The contract provided that the local authority should pay for the cost of the houses, plus £40 per house to pay for time lost through wet weather, holidays, unemployment, insurance, &c., and plus 6 per cent. on the estimated cost to cover head office expenses and plant. That percentage was small, but it was proving adequate on the contracts in hand. The two large Guild housing contracts now being carried out in London—400 houses at Walthamstow, and 190 houses at Greenwich—were being carried out at considerably lower cost than other tenders which were submitted for the work, and at less than £1,000 per house, including all the Guild charges. The Guild would very much like to build single houses for private people, but there were several difficulties in the way, and part of the cost would probably have to be asked for in advance to enable the plant to be put on the ground. On municipal contracts the Guild obtained advances from the Co-operative Bank, secured on the first payments for the work, to cover preliminary expenses, but that would not be such a simple matter for a single house.

The Guild did not want to give lump-sum tenders, which would mean that it would have to have invisible margins out of which it would have to manœuvre to get its remuneration. They wanted to take the risk off the owners' shoulders, and were working out a form of contract which would do that by including an estimate of the cost of the work and sums for the provision of continuous pay, unemployment insurance, and head-office expenses, and a sum to enable the Guild to extend its activities. The Guild would take the risk in return for a premium to insure the Guild against loss owing to the discontinuance of the work. These premiums would be paid into a central pool, from which the Guild would recoup itself for losses.

It had been said that the form of contract which guaranteed the Guild a profit of £40 per house would increase the cost of building, but he believed it would tend to reduce the cost, owing to the removal of the fear of unemployment and the betterment of the working conditions increasing the enthusiasm of the operatives in their work.

Mr. A. Hull (Chairman of the Walthamstow Building Guild Committee) said he had never seen men work with such enthusiasm as they were doing on the Guild housing contract at Walthamstow, and that proved conclusively that, given an opportunity of working without the fear of unemployment and of lost time through wet weather, the men would more than make up for any extra pay they were receiving. The conditions in the past always had a tendency to lead to "scamped" work, but the Guild movement stood for thorough, efficient and proper craftsmanship. The tendency of the present system, under which the builder was a capitalist, was all against beautiful building, as the contractor would eliminate everything he could in order to get a profit. The architects and the bricklayers were all cogs in the wheel of the building industry, and they should all work together for the erection of beautiful buildings.

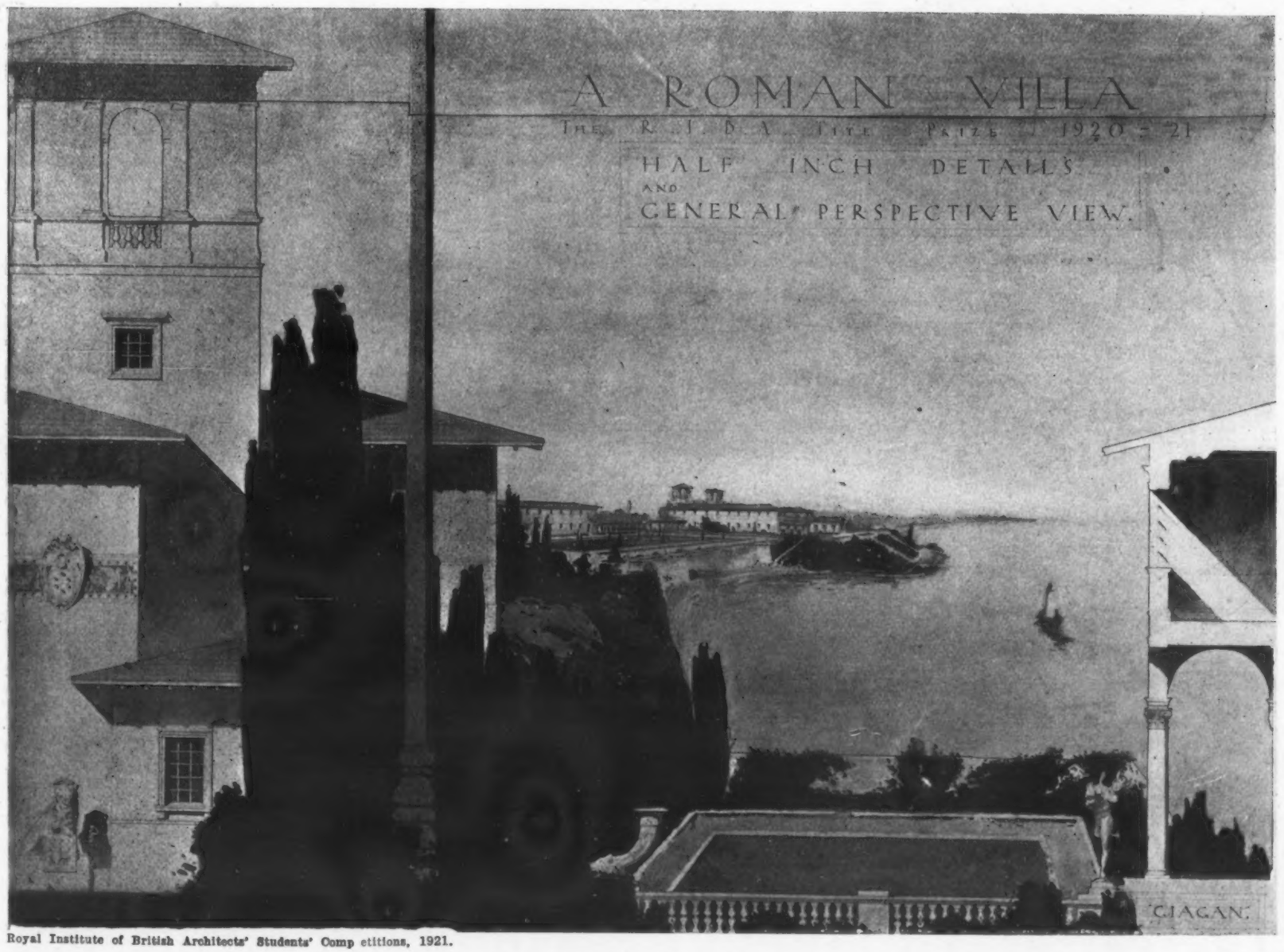
Discussion.

The Chairman, in moving a vote of thanks to the speakers, said there was an extraordinary amount of willingness for service in people, and that accounted for the large output being obtained on Guild contracts, and if successful the Guilds would be a tremendous contribution to the development of the world. The building industry was probably the best that could have been selected for the experiment, because there was practically no foreign competition. He thought there was a certain danger of this form of building producing a sameness and stereotyping of design, and he could imagine that if the ideals of the Guild came to fruition and the architects were absorbed into it there would be a reluctance to develop new forms of beauty and design.

Mr. T. L. Dale, in seconding the vote, said he thought the conditions of the building trade operatives before the war, when good craftsmen were liable to dismissal at an hour's notice, were terrible, and he could understand the anxiety of the operatives not to return to those conditions.

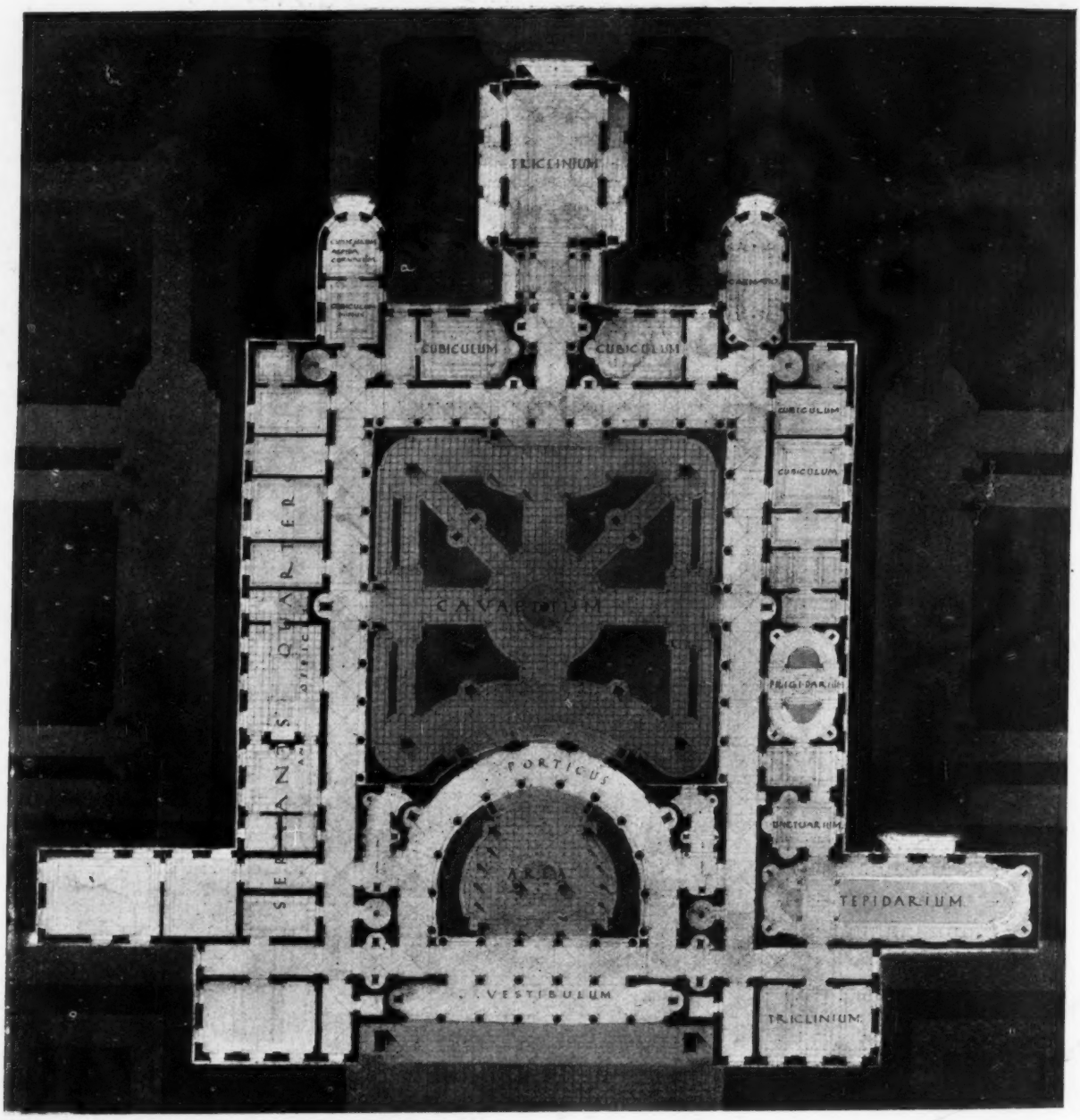
Mr. W. T. Benslyn said the cost-plus-profit system, which had been so welcomed by the builders during the war, had given the Building Guilds their opportunity. It was possible, however, that in the future, if the Guilds reached their ideals, that the tyranny of such a body might be just as great as the tyranny of an individual ; it was owing to the tyrannical attitude they adopted that the mediæval guilds were broken up.

Mr. A. H. Moberly said the Guilds would have to consider the question of how many men were to be admitted into the organisation, for if more men were admitted than the industry could bear there would be an enormous charge for unemployment pay, which would add to the cost of building.



Royal Institute of British Architects' Students' Competitions, 1921.

Honourable Mention, Tite Prize Competition. Design by MR. A. G. PATON. (*See p.* 374).



Royal Institute of British Architects' Students' Competitions, 1921.

Honourable Mention, Tite Prize Competition.—Design by Mr. A. G. Paton. (*See p.* 374.)

Straits Settlements National War Memorial, Singapore.—Messrs. Swan & Maclaren, Architects.

[This memorial has been erected at Singapore, and the foundation-stone was laid by His Excellency the Governor, Sir Laurence Guillemard, in the presence of Monsieur Georges Clemenceau. The monument, which is about 55 ft. high, is of granite, with bronze ta lets bearing the names of the fallen. The five main steps represent the five years of war. The bronze medallion on the face of the monument bears a laurel wreath of victory surrounding a crown. The architects are Messrs. Swan & Maclaren of Singapore, and the design is by Mr. Denis Santry.]

ARCHITECTURAL SOCIETIES.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

Newstead.

In order to stimulate public interest in architecture, the Nottingham and Derby Architectural Society has for the past few years arranged a popular lecture, given at the University College, Nottingham.

Mr. Harry Gill, M.S.A., was the lecturer this year, and the title of the address was "Newstead." He referred not only to Newstead Abbey and its foundation, but to the history of the Byron family, of Robin Hood, and Friar Tuck, and gave many interesting sidelights into mediæval craftsmanship and devices of construction.

Newstead, said Mr. Gill, was founded by the Austin, or "Black," Canons. It was the third of the religious houses founded by King Henry after the murder of Becket. The title "Newstead Abbey" was a misnomer, as Newstead was only a priory, and was occupied by canons and not by monks. When the dissolution of the monasteries occurred the church was pulled down. Nearly the whole of the present house stood on and was incorporated with monastic walls. The west front, which still remained after six-and-a-half centuries, was a tribute to the craftsmen of old. The buildings were not erected by the monks, who had plenty of time at their disposal; they were built by craftsmen who had to earn their living. In this instance they came from York, completed the church in 1270, and went on to Southwell. Sir John Byron came into possession in 1540, and at once began to put it to secular uses. Practically every stone was used for utilitarian purposes. A brass lectern, containing documents relating to the priory, had been recovered from the pond in the grounds, into which it had been cast, and was now to be seen in the choir at Southwell. The Byrons had been associated with the neighbourhood long before they came into possession of Newstead. One, who came over with William the Conqueror, held the manor of Hucknall when Domesday Book was compiled.

The lecture was illustrated with a series of lantern slides.

SOUTH WALES INSTITUTE OF ARCHITECTS.

Annual Dinner.

The annual dinner of the South Wales Institute of Architects was held at Cardiff on March 10. Mr. Ivor P. Jones, A.R.I.B.A. (President) was in the chair, and the guest of the evening was Mr. J. W. Simpson (President, Royal Institute of British Architects), supported by Sir Charles Ruthen, F.R.I.B.A. (President, Society of Architects), Mr. F. R. Yerbury (Secretary, Architectural Association), and Mr. T. Taliesin Rees, F.R.I.B.A. (President, Liverpool Architectural Society).

Mr. Ivor Jones, proposing the toast of "The R.I.B.A., the Society of Architects, the Architectural Association, and the Allied Societies," reviewed the recent work of the South Wales Institute of Architects, pointing out the great increase of membership and the awakening of interest in architectural matters in South Wales, and emphasising the fact that but for the wise guidance of the Royal Institute of British Architects, the sympathetic help of the Society of Architects, and the interest of the Architectural Association and the allied societies, the South Wales Institute could not possibly have done the work it had done in the past or do the work it hoped to do in the future.

Mr. J. W. Simpson, in responding for the R.I.B.A., said architects needed to keep before them the ideal of "good building" to be attained by a high standard of practice, and they could, by seeking election on municipal councils, do a great deal for the community with their special knowledge, and also for the profession by showing the public that architects, because of their training, were practical men. There was a need for a proper understanding between architects and builders, resulting in good work, which would in its turn win the approval of the general public and so gain for architects generally the credit to which they were entitled.

Sir Charles Ruthen, in responding for the Society of Architects, said other professions did not allow anybody to practise until he had proved himself capable and efficient, whereas the so-called architect was often an individual possessing no architectural qualifications, the result being a general lowering of the high standard aimed at by the profession. A system of registration was required.

Mr. F. R. Yerbury, in responding for the Architectural Association, referred to the educational work of the Association and the South Wales School of Architecture, predicting a successful career for the latter under its able head. Mr. W. S. Purchon.

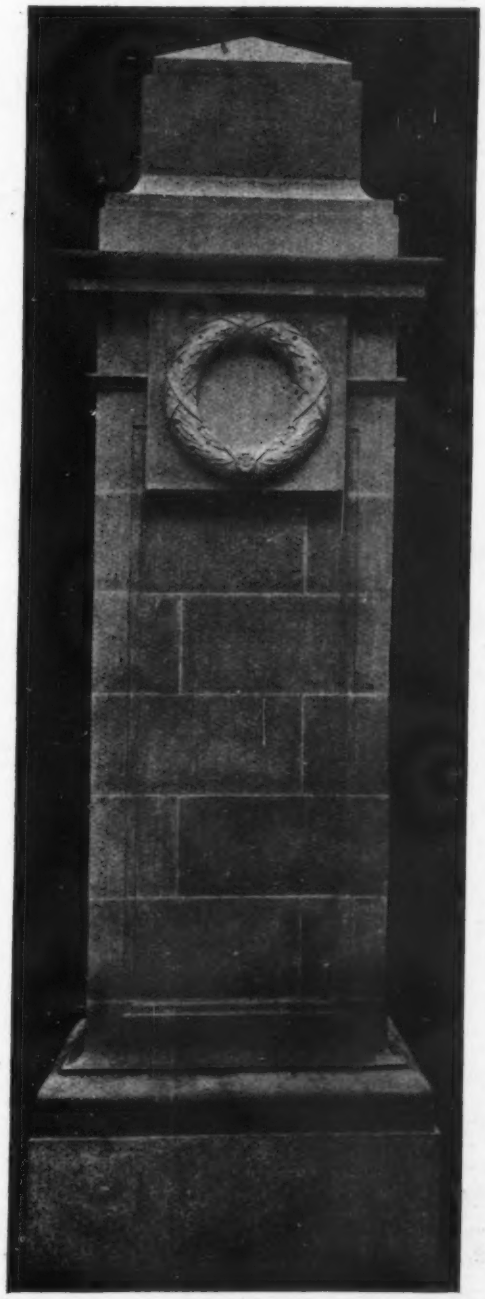
Mr. Taliesin Rees, responding for the allied societies, referred to the new resolution of the R.I.B.A. to hold its Council meetings periodically in the provinces; this, he said, would give the allied societies more prestige locally and greatly encourage them in their work.

The toast of "The South Wales Master Builders' Employers' Federation" was proposed by Mr. H. C. Portsmouth, F.S.Arc., who referred to the danger to the architectural profession through the activities of the Office of Works, and the further waste of public money by a Government department endeavouring to perform the impossible by acting as its own architect and contractor.

Mr. E. W. King (President of the Federation) responded.

Councillor E. C. M. Willmott, A.R.I.B.A., proposed the toast of "The Guests," which was responded to by Dr. Evans Hoyle (Director of the Welsh National Museum), and Mr. R. O. Saunderson (President of the Cardiff Chamber of Commerce).

The whole of the arrangements for the dinner were carried out by Mr. Percy Thomas, O.B.E., A.R.I.B.A.



North London Railway War Memorial.
MR. R. WYNN OWEN, A.R.I.B.A., Architect.

[This memorial, in Hopton-Wood stone, has been erected at Broad-street Station.]

THE DRAWINGS OF THE LATE H. W. BREWER.

London in the Time of Henry VIII.

A LECTURE on "London in the Time of Henry VIII," illustrated by lantern views and a model of Old London Bridge, the property of *The Builder*, was delivered in Croydon last week by Mr. H. A. Cox, F.C.A., one of the Managing Directors of the Journal. He announced that the views were all the work of one man, Mr. H. W. Brewer, and that they had been published in *The Builder* from time to time, while the model had just been completed by Mr. L. H. Partridge for exhibition purposes. Mr. Brewer, he said, possessed a retrospective vision which enabled him to see London as it was 400 or 500 years ago, while he also seemed to have prophetic vision, for nearly all his views were from impossible positions except for an aeroplane. The general view of London in the time of Henry VIII enabled the lecturer to trace an "aeroplane tour," subsequently taken by the audience, over Aldgate, Cheapside, Old St. Paul's, Ludgate, Newgate, a "Monastic Suburb" with Ely-place in the foreground, and terminating on the Surrey side of Old London Bridge, from which it was viewed as Brewer saw it and as Mr. Partridge has modelled it "after Brewer."

The lecturer gave in passing short descriptions of some fifteen monastic institutions within and without the City, and pointed out what a tremendous transformation their dissolution made to the City in the sixteenth century. He also traced the extent of the Great Fire of 1666, which consumed all but Aldgate and Bishopsgate, making the complete rebuilding of the City and its Cathedral essential.

Except for those houses on the end of London Bridge nearest the City, the bridge escaped complete destruction, which, however, became inevitable just a hundred years ago. It had ceased to bear houses upon it for some 60 years, and in view of the proposal that the new "St. Paul's Bridge" should have houses and shops on either side of the roadway, a study of *The Builder* model of the old bridge will repay careful study.

This model will be exhibited at Olympia during the Building Trades' Exhibition, where Mr. Cox will also deliver his lecture, under the chairmanship of Sir Banister Fletcher, F.R.I.B.A., Sheriff of the City of London, on Thursday, April 14, at 3 p.m.

Worcestershire Archæological Society.

At the last of the winter meetings of the Worcestershire Archæological Society, held in the Trinity Hall, Worcester, last week, Mr. E. A. B. Barnard gave a lecture, illustrated with lantern slides, on "The Dineleys of Cropthorne." He said even at the age of fourteen he copied some of the inscriptions in Cropthorne Church, and saved them from oblivion, as they were fast becoming illegible. Edward Dineley was probably wounded in 1645 in a battle with the Crown forces, and died a little while after. His monument was the big one in Cropthorne Church, and, being too large to go under the arch in the position chosen for it, a portion of the centre arch was removed. As might have been expected, the arch gave way, and fell upon the top of the monument. This also cracked and started giving way, but the whole was restored in 1908.

Leading Contents.

	PAGE
ARTISTIC CONTROL	365
NOTES	366
CORRESPONDENCE	369
ARCHITECTURAL ASSOCIATION	370
ARCHITECTURAL SOCIETIES	373
THE DRAWINGS OF THE LATE H. W. BREWER	373
PROFESSOR LETHABY ON "OUR HOPE FOR THE FUTURE"	379
THE CITY CHURCHES	380
A CONTRAST BETWEEN ENGLISH AND AMERICAN METHODS IN BUILDING	381
SURVEYORS' INSTITUTION	382
LEGAL SECTION	383
HOUSING AND TOWN-PLANNING NOTES	385
THE COST OF BUILDING WORKING-CLASS DWELLINGS IN SCOTLAND	385
THE BUILDING TRADE	386
THE MEASURE OF OUTPUT IN BUILDING	387

ILLUSTRATIONS.

"Mollen," Elsinore, Denmark.

This is an example of modern Danish house-planning of a simple and compact order, but which also comprises some added English comforts. The house is built upon the side of a hill sloping eastward to the shore of the Sound separating Denmark from Sweden. Advantage is taken of the slope to secure a basement for the most part above ground. A point in the planning is the single chimney stack, in which all flues are collected, including the flue from the boiler which actuates a central heating system. The walls are rough-casted on stock brick, and the roof is thatched. The normal Danish system of lightning protection of thatched buildings may be noted. The view is a genuine moonlight photograph, and the lights of Sweden, two miles away across the Sound, may be seen. The exposure was one hour, with No. 4 stop.

The architect is Mr. W. D. Caroe, F.S.A., of Westminster. Picturesque windmills are still a feature of Danish landscape, and the house takes its name from one close at hand, though just out of the picture. It grinds provender, cuts wood, pumps water, and provides the power for electric light.

Cottages at a South Wales Colliery.

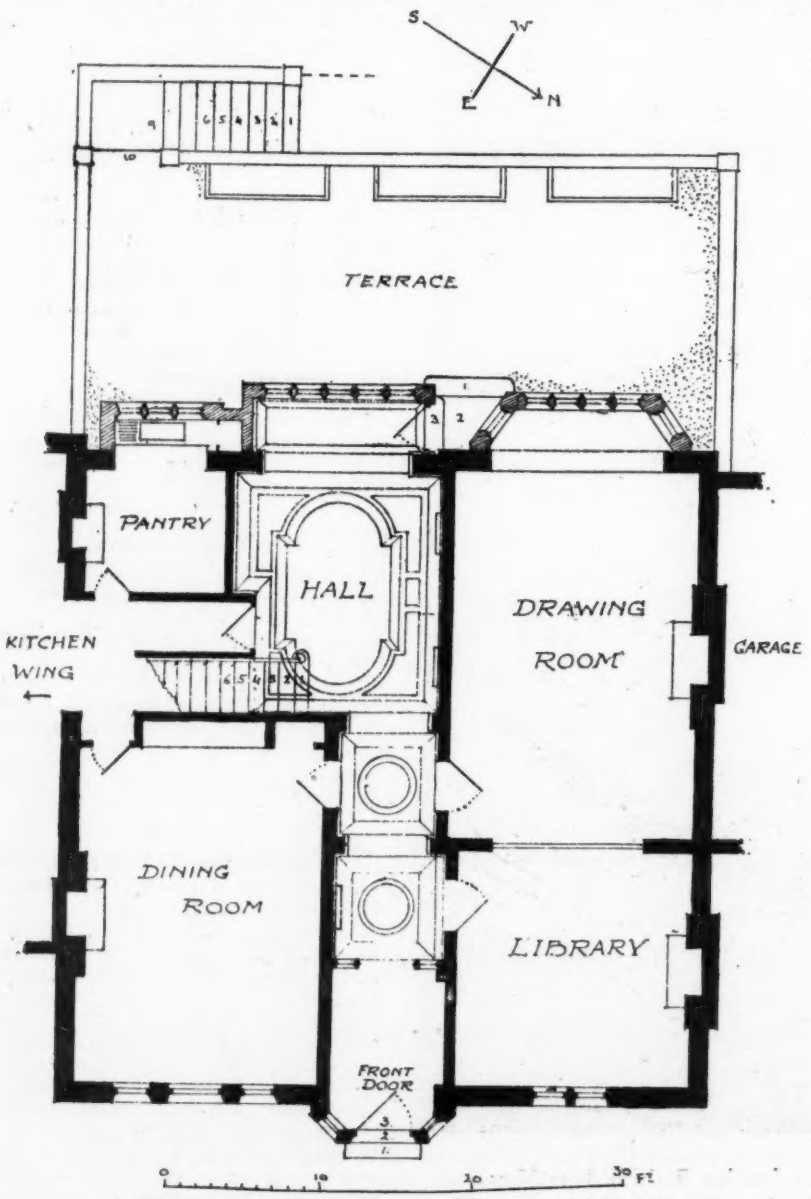
These cottages have been built for the leading foremen of various sections of a South Wales colliery, and are, therefore, more commodious than usual. The site is an open one along the side of a road in a very picturesque district, the cottages facing east. Bathrooms were provided on the ground floor in accordance with local tradition. The two outside cottages have each three bedrooms and the centre one four, to provide for a lodger.

The walls are built in brick in two 4½ in. thicknesses with a 2 in. cavity, cement rough cast is used outside and plaster inside, local grey-blue slates on the roof, and brindled tile, half-round ridges and hips. External and internal woodwork is coated with dark brown preservative, and external iron-work and chimney pots are tarred. All internal walls are distempered. Welsh ovens and open fires are installed in the kitchens in accordance with local custom. Floors to all ground floor rooms are cement, in some cases finished red. Sashes have 1½ in. casements throughout. Drainage is carried into a septic tank on the boundary of the site.

The manager's house is built of waste bats from the colliery fire-brick works, with walls 1 ft. 1½ in. thick. The nature of the material prevented any attempt at bond, and the walls are, therefore, a kind of brick rubble. The exterior is finished with cement rough cast in one coat stippled with a brush. The remainder of the exterior and interior is finished as in the cottages. The front of the house faces south, but the finest views are to the east and north, although views on all sides are good. The office is planned in such a way that it can be entered by business visitors without disturbing the private portion of the house and without building two porches or lobbies.

In both buildings the strictest economy was observed, and the final costs were very favourable. The work was executed by a local contractor on a prime-cost contract.

Messrs. Bennett & Hossack, AA.R.I.B.A., of 12, Bedford-row, W.C. 1, are the architects.



Alterations and Additions to House at Liverpool.
MR. RONALD P. JONES, M.A., Architect.

War Memorial, Gateshead.

The Gateshead war memorial takes the form of a cenotaph and curtain wall. The site is a good open one, at the junction of Prince Consort-road and the Great North-road. It is proposed to be erected in grey granite, with cast bronze panel with the cross in low relief, in front of which stands a figure of "Defiant Man." The cast-bronze door beneath will give access to a stone-lined and vaulted chamber, in which will be kept a book containing the names of the fallen. An ever-burning lamp will be hung from the ceiling, and it is proposed that the chamber will be ceremoniously opened on special occasions. The height of the cenotaph is 33 ft. 6 in. from the pavement.

Mr. John W. Spink, of Clarence-chambers, Kingston-on-Thames, is the architect. The design was selected in open competition.

Alterations and Additions to "Eastbourne," Liverpool.

This was a stone-faced Victorian Gothic house, built about the middle of the nineteenth century, and some years later partly modernised. The present alterations consisted in the removal of all the windows on the garden front, and the addition of new bay windows in Stancliffe sandstone of a light cream colour, with which the old wall-facing was re-used as the filling-in. The terrace was enlarged, and the former grass slope replaced by a stone retaining wall.

In the interior, the former garden hall was enlarged and adapted as a sitting-room, panelled in ivory white, with an enriched plaster ceiling; and this treatment was extended through two bays of the entrance vestibule, formerly separated by Gothic arches. The room is heated by radiators, enclosed in decorative metal casings. On the first floor the rooms on the north side were rearranged as a visitors' bedroom suite, with a bathroom attached.

The general contractors were Messrs. G. H. Morton & Son, of Liverpool, who also carried out the redecorations and panelling; the enriched plaster work was by Messrs. Ben Henry Johnson; the steel-cored casements by Messrs. Welsteads, Ltd., of Croydon; the radiator cases by the Artificers' Guild, of London.

The architect is Mr. Ronald P. Jones, M.A., of 7, Stone-buildings, Lincoln's-inn, W.C. 2. The work was carried out for Mr. C. Sydney Jones.

Tite Prize Competition, 1921.

We illustrate this week the design awarded an "Honourable Mention" in the Royal Institute of British Architects' Tite Prize Competition, 1921, by Mr. Archie G. Paton, A.R.I.B.A. The subject was "A Design for an Italian Villa."

Mr. Paton has sent us the following notes: "Every year in the conditions governing the

Tite Prize we read that the design should be 'according to the methods of Palladio, Vignola, Wren and Chambers,' but this year the addition of Pliny's letter to Gallus was introduced as an inspiration for the design of an Italian villa. With such apparently militating conditions it was a little difficult to determine the best lines on which to base a scheme, whether those of the masters of the Italian Renaissance, or according to the rules prevalent in the time of Pliny. Considering the former condition a binding one, I decided to try to evolve an harmonious scheme in which expression of Pliny's description would be given in plan while the predominant character of the composition would be Italian Renaissance of a reposeful quality combined with direct simplicity. In plan, the disposition of the principal apartments is on the lines of Pliny's description A porticus forms the principal entrance, and gives access to the D-shaped area. In the angles between the D-shaped court and the great courtyard staircases are placed which give access to the upper floor and towers. The upper floor was introduced for the express purpose of providing ample accommodation for servants, and to achieve a compact and simple plan."

The first premiated design, by Mr. Gordon H. G. Holt, was given in our issue for January 28.

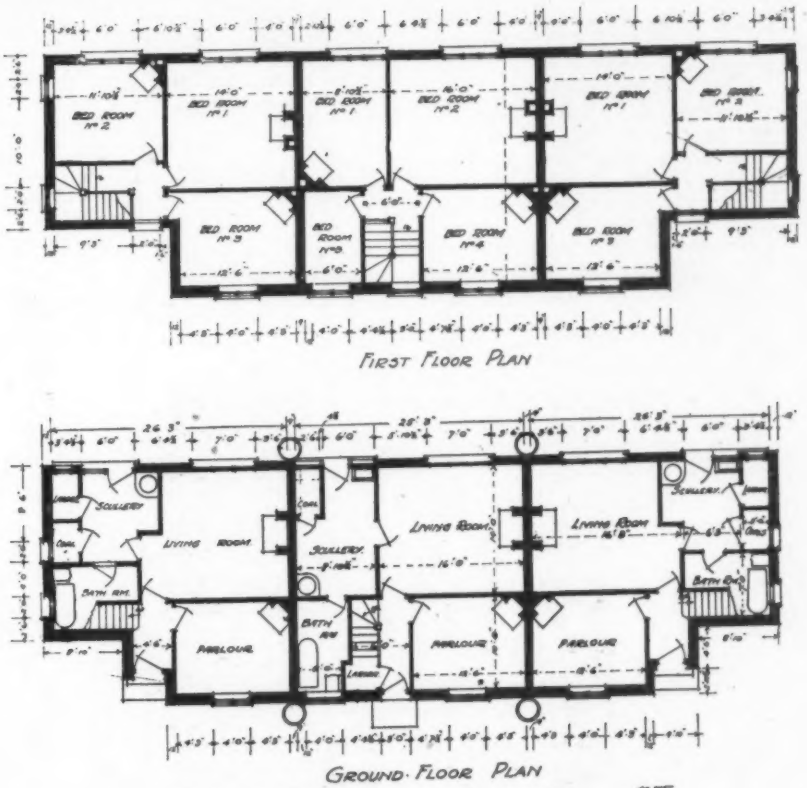
London County and Westminster Bank, Hythe.

On the site of the old premises in the old High-street, of Hythe, Kent, a new building has recently been erected, with a frontage of about 90 ft., having a southern aspect.

On the ground floor is a spacious central banking hall (26 ft. by 32 ft.), from which the strong-room, manager's room, waiting-room and lavatory for the clerks have immediate access. The upper floors contain the living-rooms and bedrooms of the manager. In keeping with the architecture of this old Cinque Port, the premises are designed in the Georgian style.

Along the front is a Portland stone base, at each end of which are gates leading to the manager's private entrance, and into the garden, which occupies the whole space at the rear of the premises. The façade generally is of 2 in. bricks supplied by Messrs. Thos. Lawrence & Sons, of Bracknell, cherry red being employed for the pilasters and plum colour for the main walling. In keeping with other local buildings, teak shutters have been provided to the first floor windows. The flues have been gathered into tower-shaped chimney-stacks, the roof being covered in green Westmorland slating in graduated courses. The fire-resisting floors were carried out by Messrs. Matthew T. Shaw & Co. and the Fawcett Construction Co. The mosaic paving was executed by Messrs. Farmer & Brindley. The wood-block flooring was supplied and laid by the Zeta Wood Block Flooring Co. The lettering to the exterior and the grilles to the banking hall were supplied by Messrs. Bainbridge Reynolds. The bank fittings were executed by Mr. Henry Knock, of Ashford. The general contractors for the work were Messrs. Dove Bros.

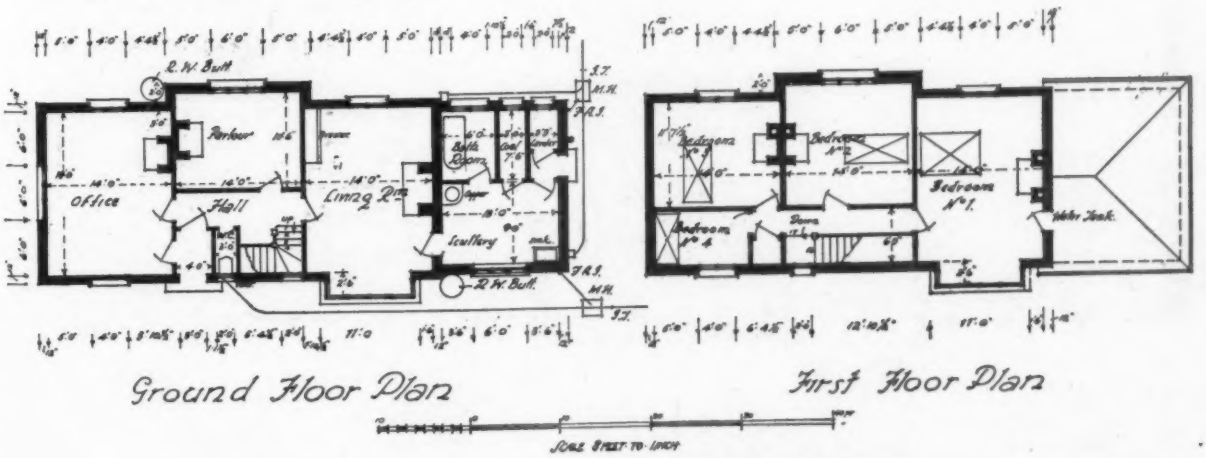
Sir Banister Fletcher, F.R.I.B.A., is the architect.



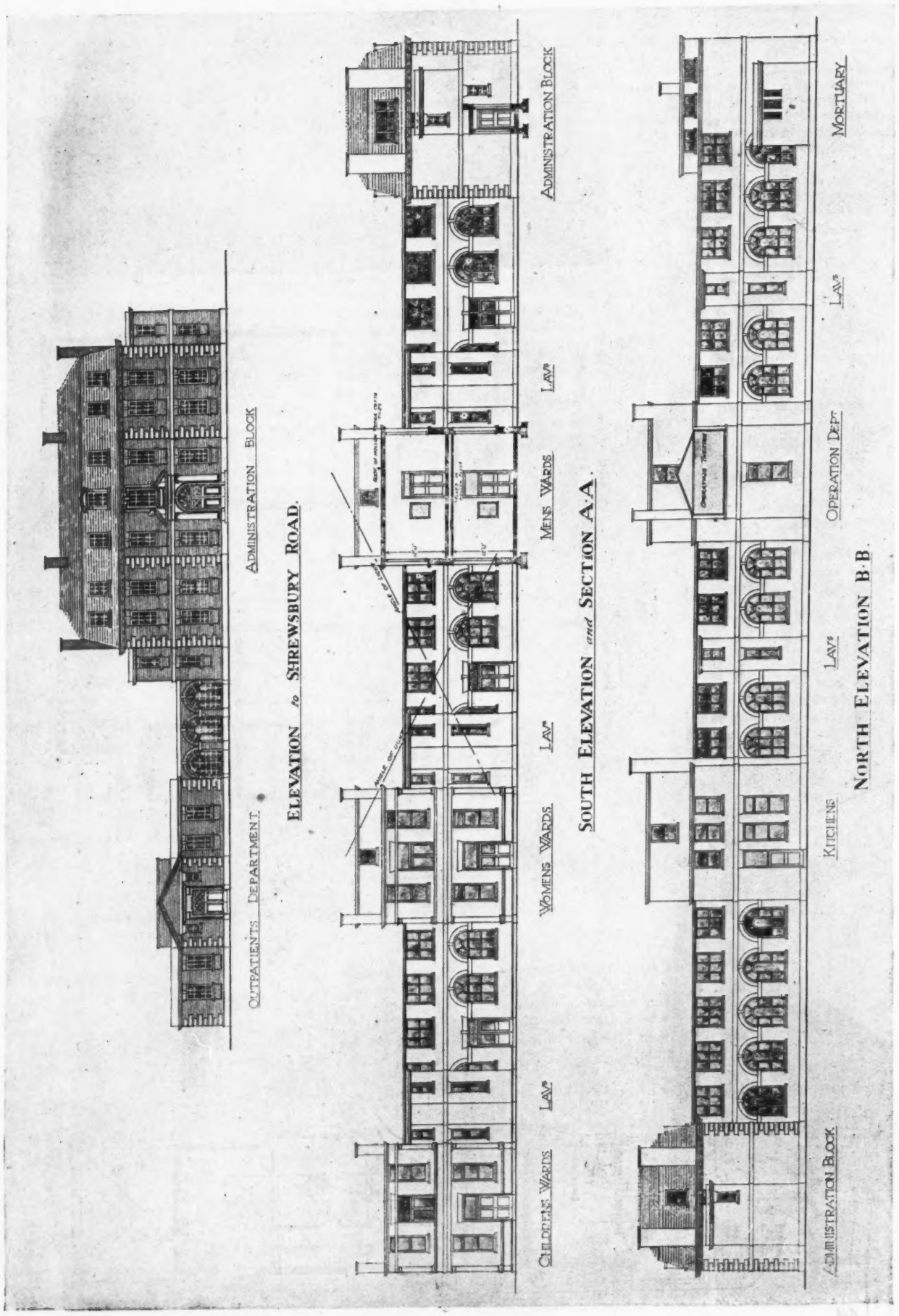
Concrete Cottages for a South Wales Colliery Company.
MESSRS. BENNETT & HOSSACK, AA.R.I.B.A., Architects.

East Ham Hospital Competition.

We illustrate this week the first premiated design in the East Ham War Memorial Hospital Competition, by Messrs. F. E. Mennie & C. B. Smith. Mr. George Hubbard, F.R.I.B.A., was the assessor.

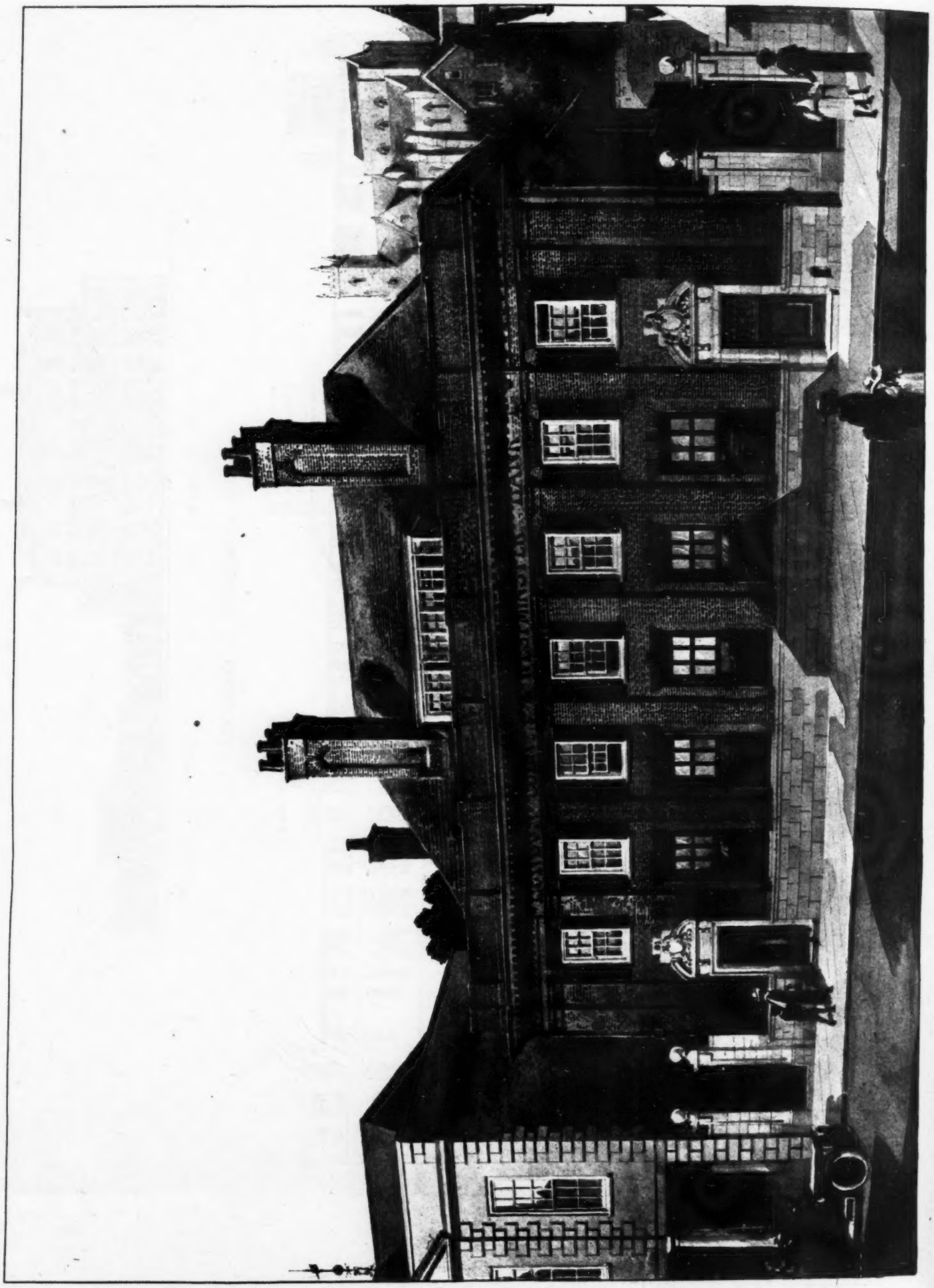


Manager's House for a South Wales Colliery Company.
MESSRS. BENNETT & HOSSACK, AA.R.I.B.A, Architects.

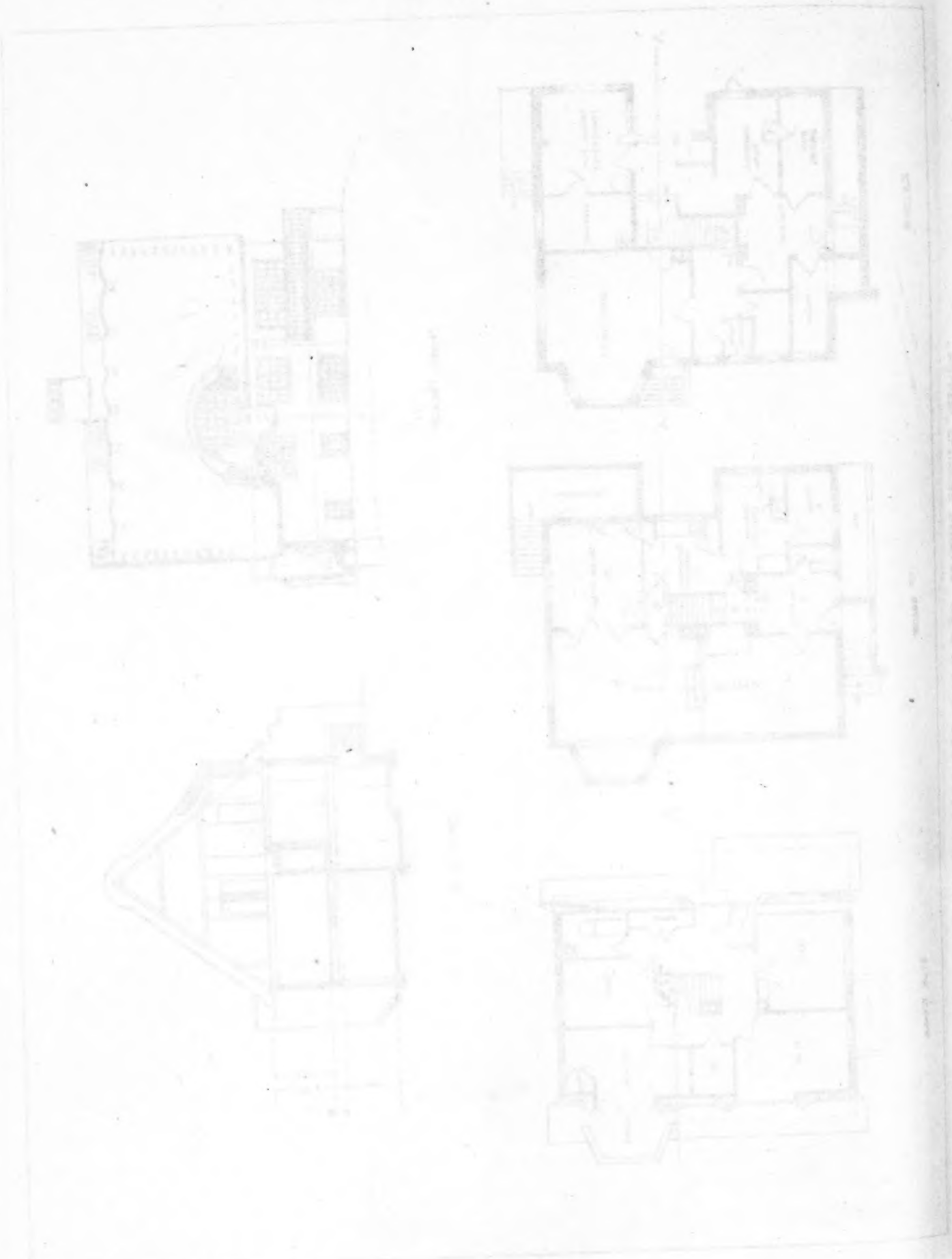


East Ham War Memorial Hospital Competition.

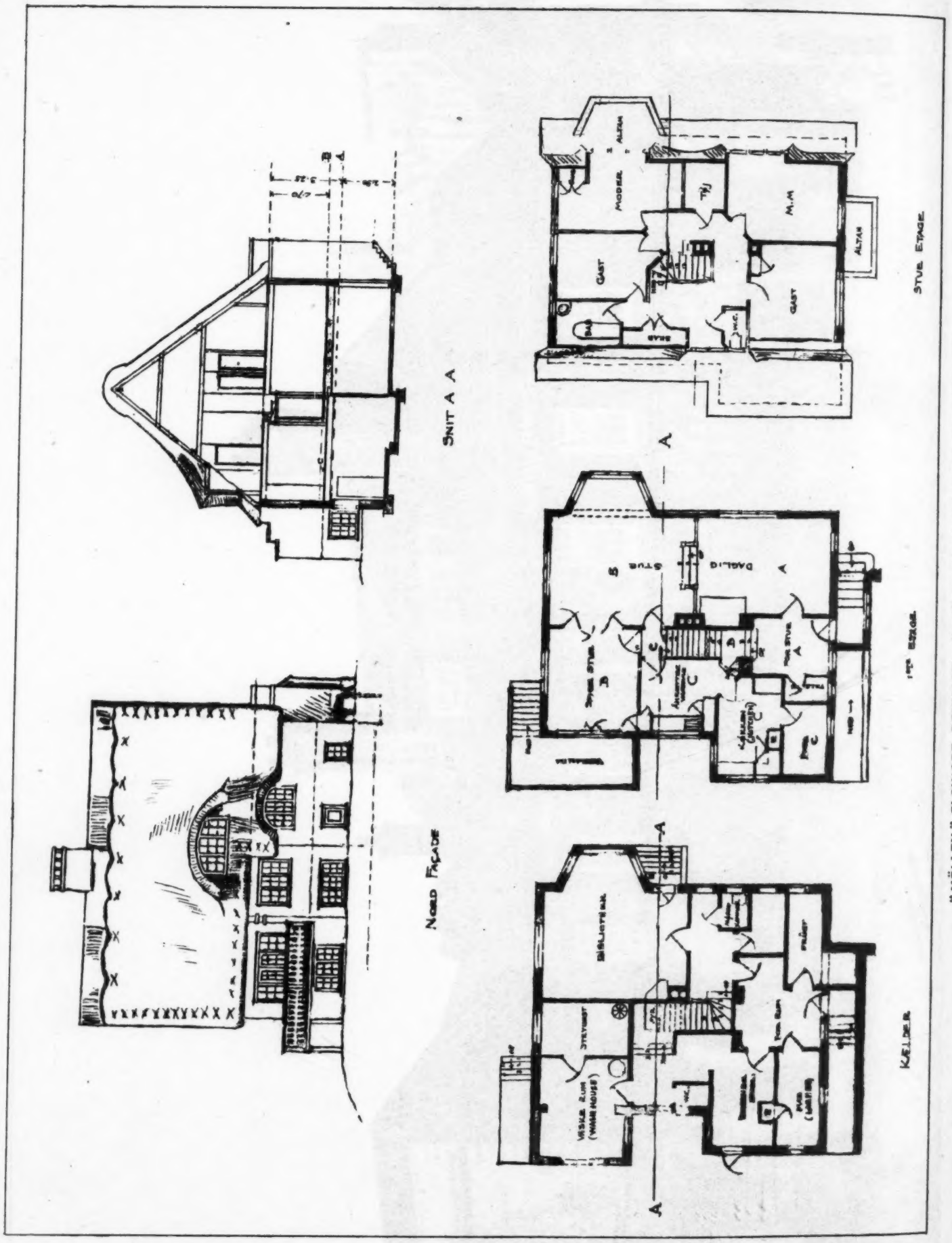
First Premiated Design. By Messrs. F. E. Mennie & C. B. Smith.



BANK, HYTHE, KENT. SIR BANISTER FLETCHER, F.R.I.B.A., ARCHITECT.

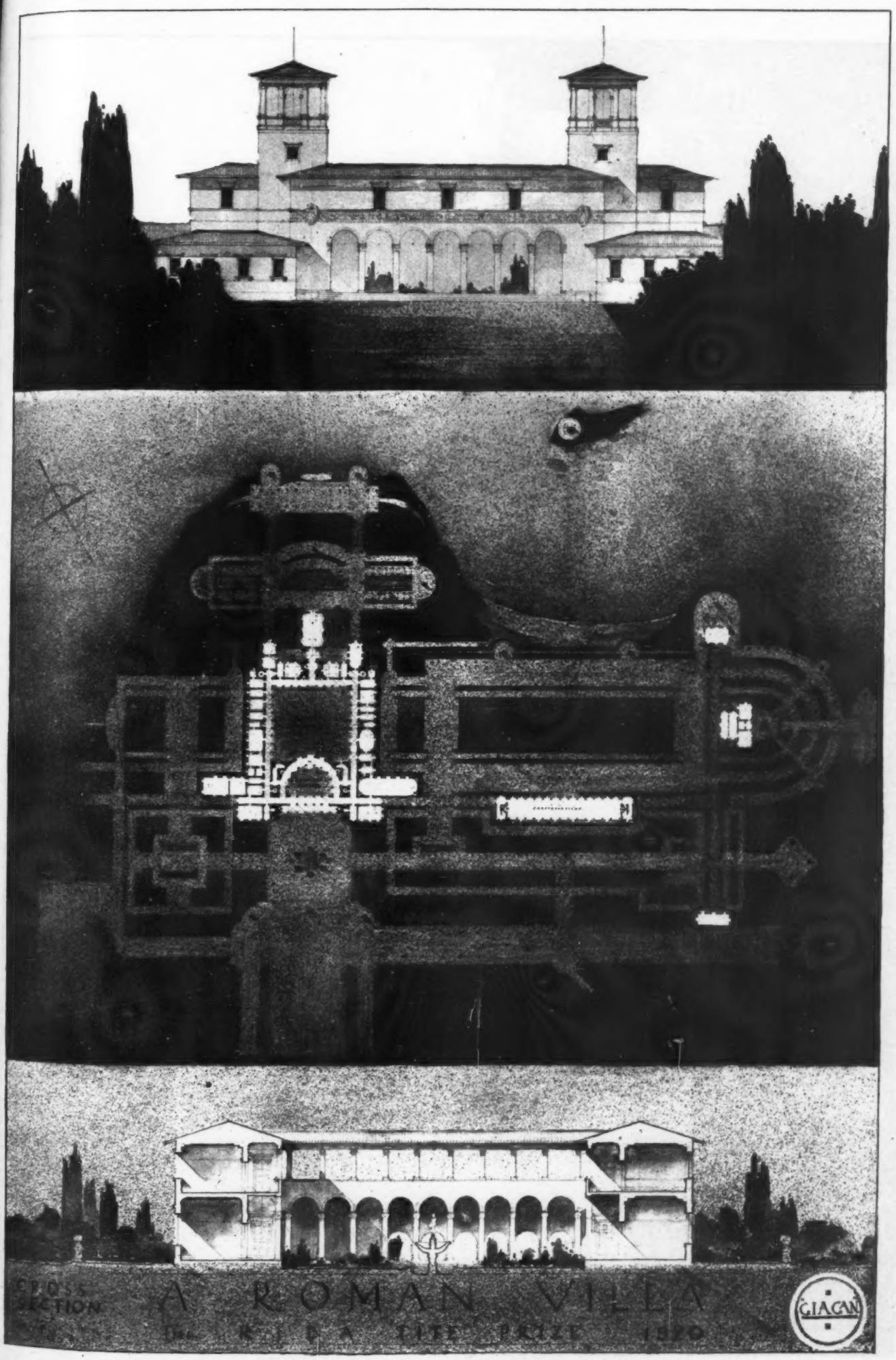


BANK, HYTHE, KENT. SIR BANISTER FLETCHER, F.R.I.B.A., ARCHITECT


SNIT A A
NORD FAÇADE
STUE ETAGE
1ste SALEN
KÆLDER
A
A
B
B
MODER
ALTAN
M.M
GAST
GAST
ALTAN
BAD
WC
DAGLIG STUE
STUE
SPISE STUE
BIBLIOTEK
VASKE RUM (WASHHOUSE)
STRYGNING
PAKER
BAD (BATHING)
"MÖLLEN," ELSINORE, DENMARK. MR. W. D. CARÖE, F.S.A., F.R.I.B.A., ARCHITECT.

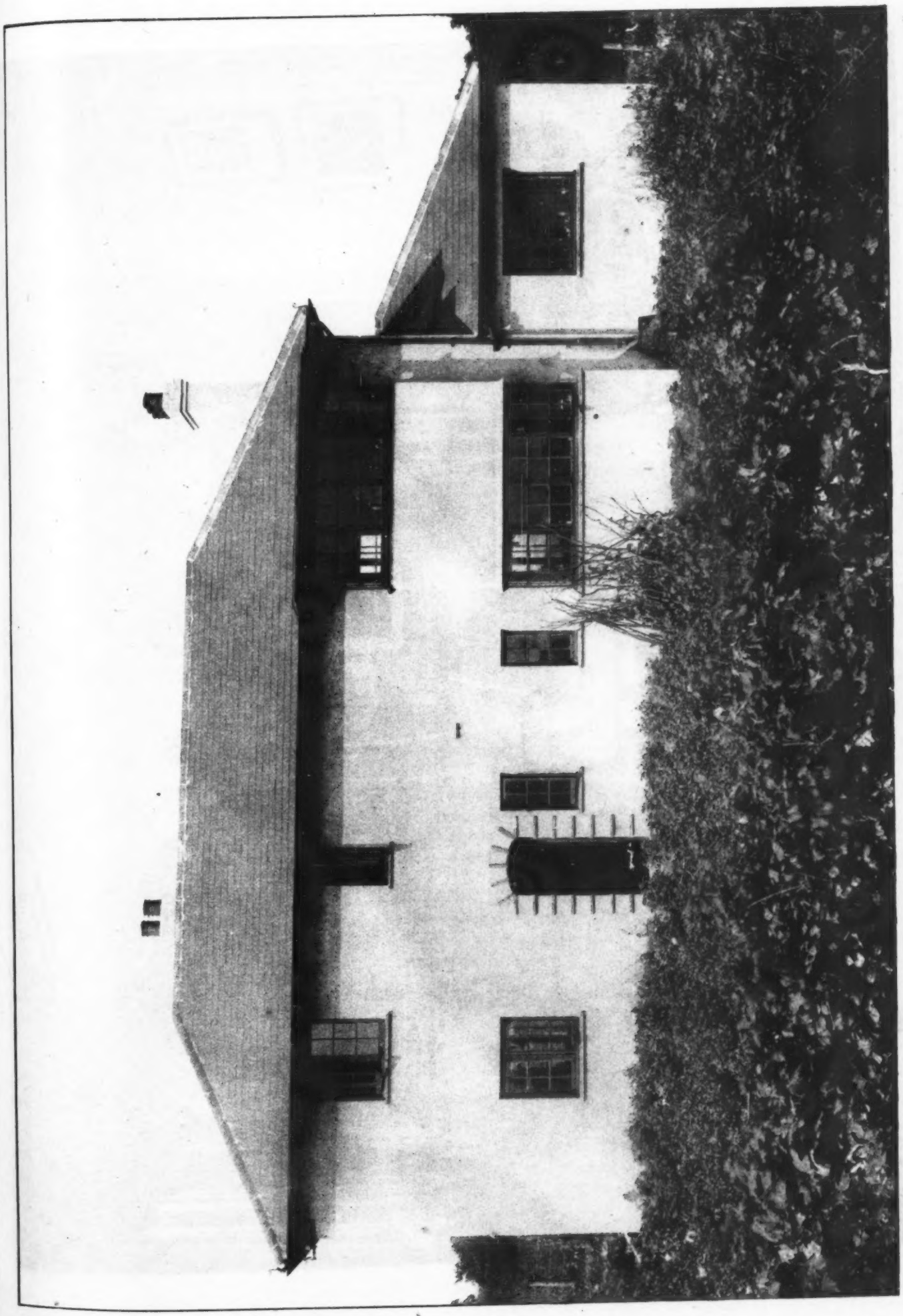
"MOLLEN," ELSINORE, DENMARK. MR. W. D. CARÖE, F.S.A., F.R.I.B.A., ARCHITECT.

WAR MEMORIAL, GATESHEAD. Mr. JOHN W. SPINK, ARCHITECT.

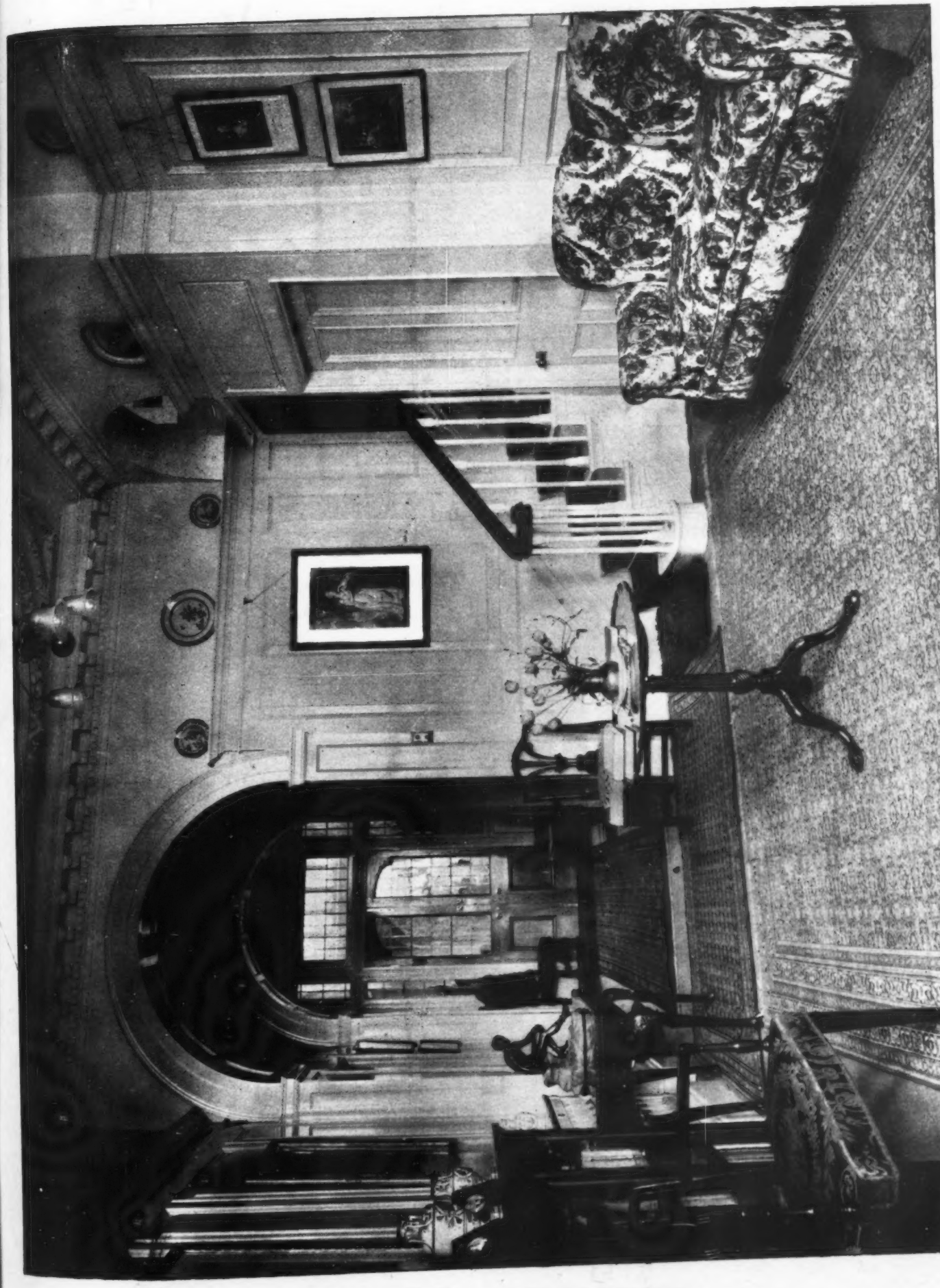


R.I.B.A. STUDENTS' COMPETITIONS: DESIGN FOR TITE PRIZE.

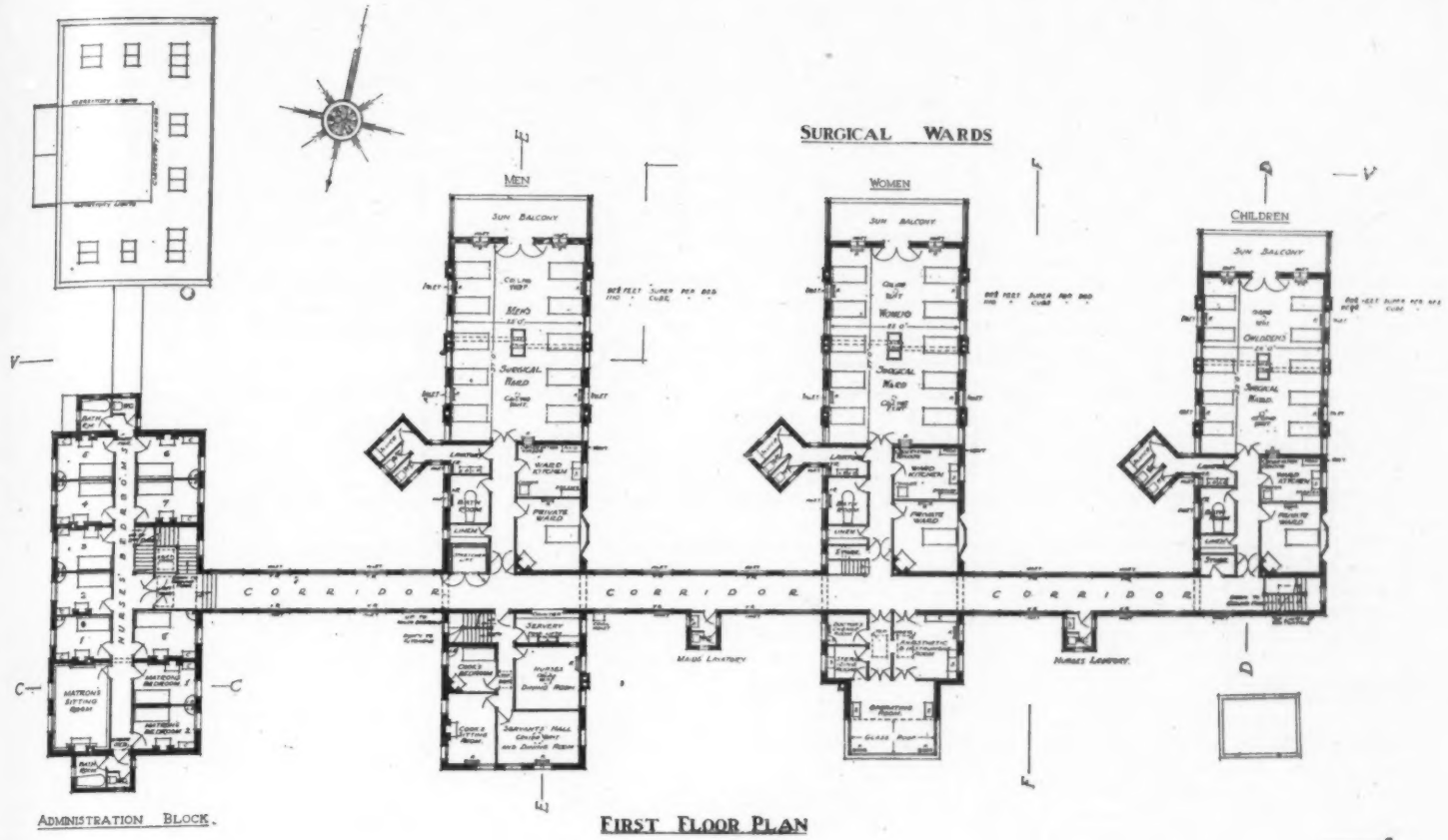
BY MR. A. G. PATON (CERTIFICATE OF HON. MENTION).

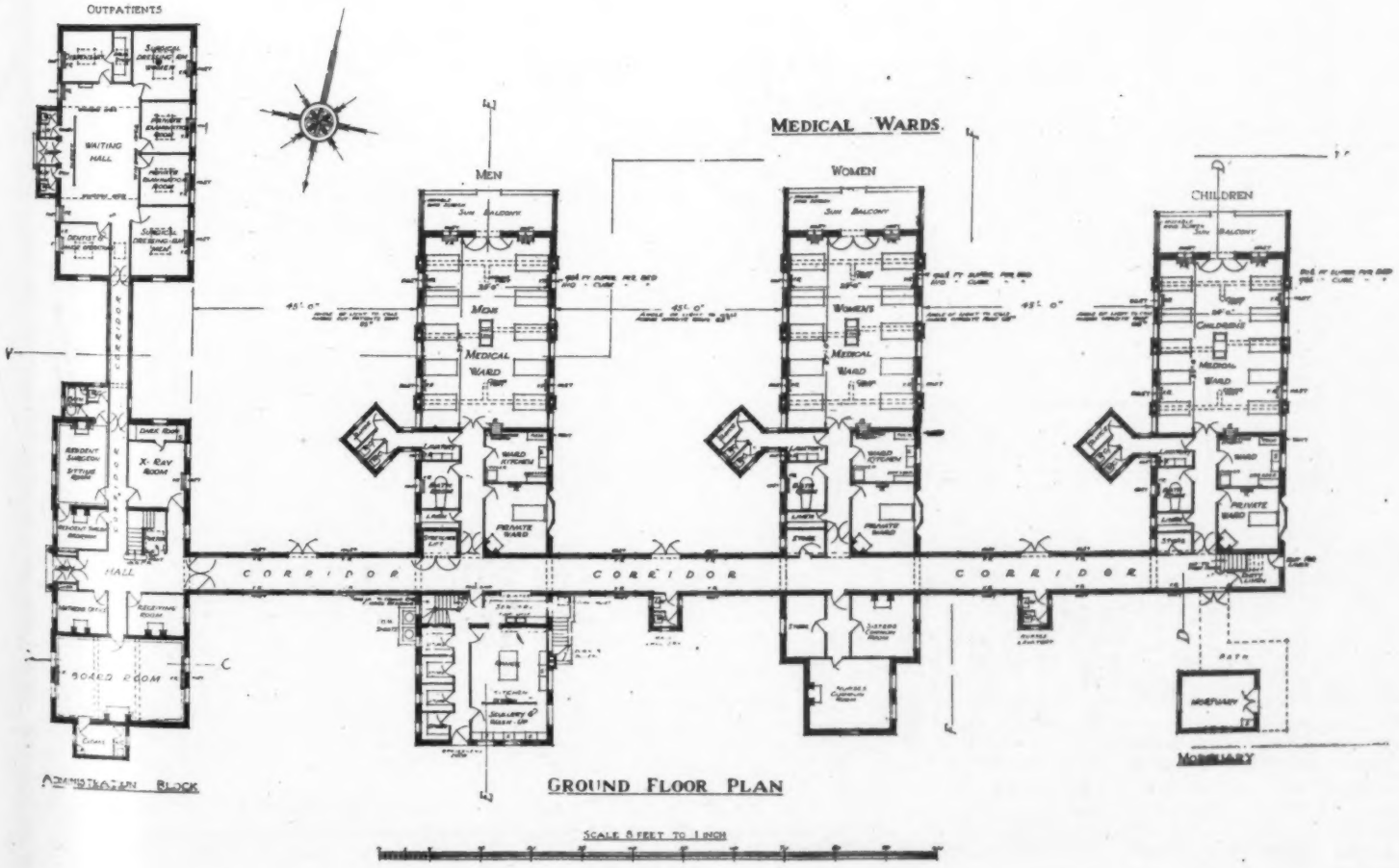


CONCRETE COTTAGE FOR A SOUTH WALES COLLIERY. MR. T. B. BENNETT, F.R.I.B.A., ARCHITECT.



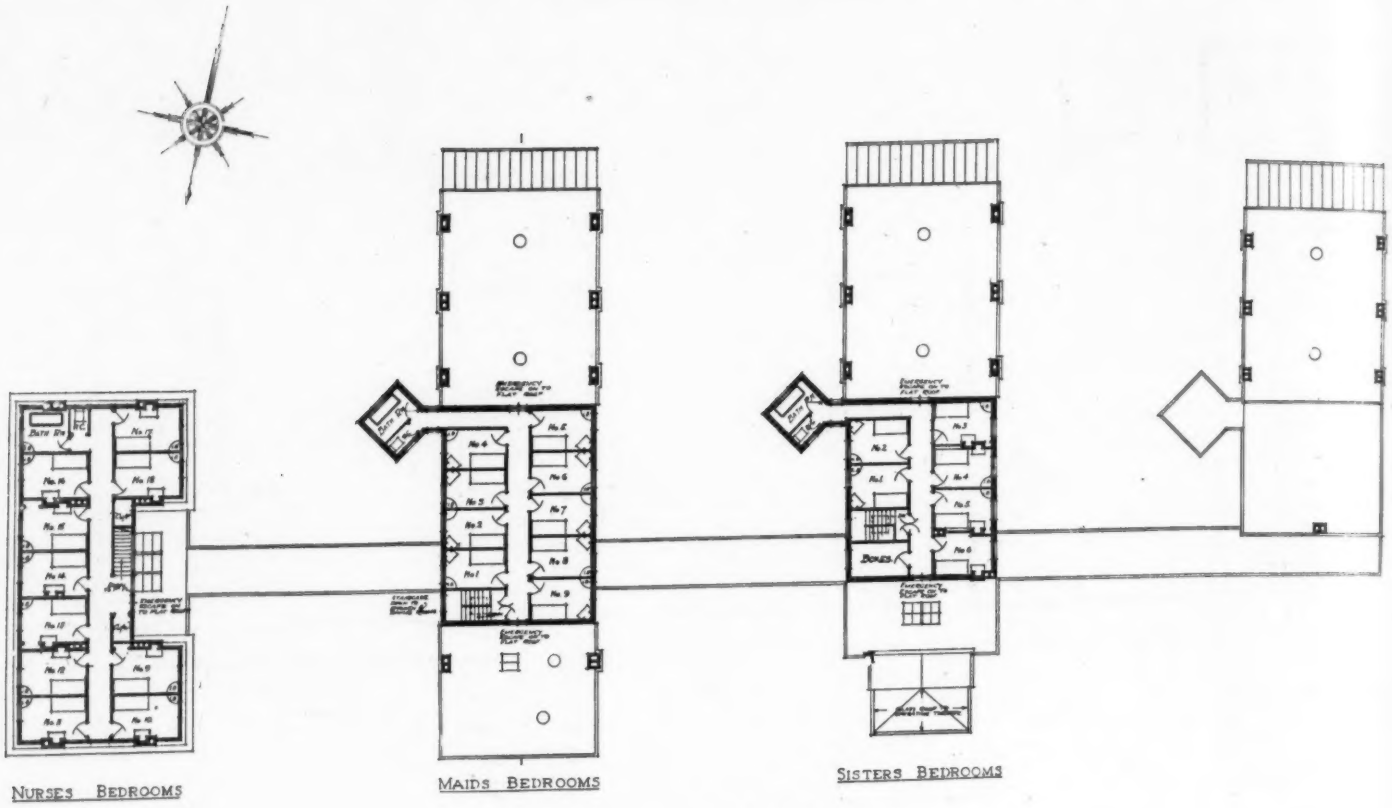
"EASTBOURNE," LIVERPOOL: HALL AS ALTERED. MR. RONALD P. JONES, M.A., ARCHITECT.





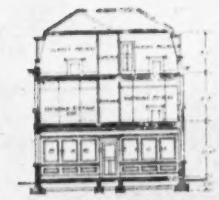
East Ham War Memorial Hospital Competition.

First Premiated Design. By Messrs. F. E. MENNIE & C. B. SMITH.

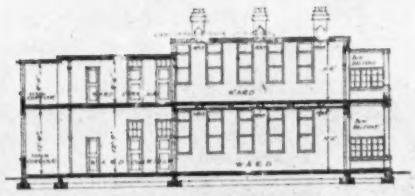


SECOND FLOOR PLAN

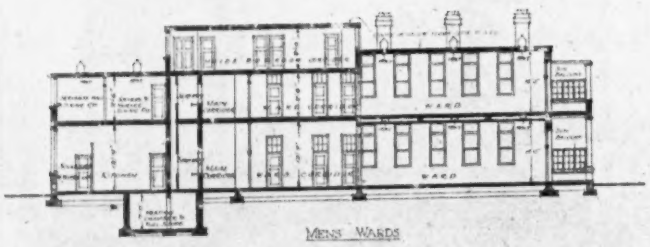
EAST HAM HOSPITAL.



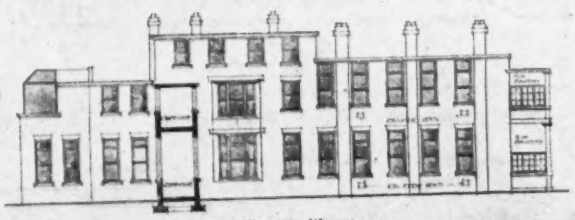
ADMINISTRATION BLOCK.
SECTION C-C.



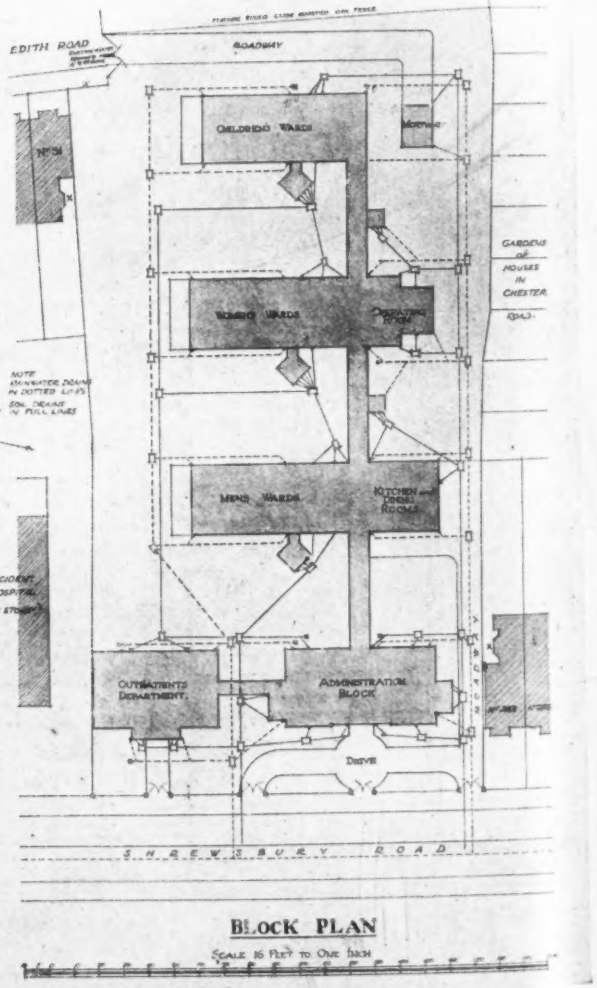
CHILDRENS' WARDS.
SECTION D-D.



MENS' WARDS
SECTION E-E.



WOMENS' WARDS.
ELEVATION F-F.
SCALE 16 FEET TO ONE INCH



BLOCK PLAN
SCALE 16 FEET TO ONE INCH

East Ham War Memorial Hospital Competition.

First Premiated Design. By Messrs. F. E. MENNIE & C. B. SMITH.

PROFESSOR LETHABY ON "OUR HOPE FOR THE FUTURE."

At the London County Council School of Arts and Crafts, on March 15, Professor W. R. Lethaby delivered an address to the students and others on "Our Hope for the Future."

Professor Lethaby said his title was given him, and they must not press him to say how far he really hoped and how far he only hoped he hoped. What he would like to hope was that some day in the future he would hope that by some means or other men of good will—wise men, if he might venture to use an old-fashioned term—might gather together and try to come to some really general agreement as to what civilisation and the things they were driving at meant. They had gone blundering on for about a century without any coherent general statement. There had been no general pronouncement as to what it was all about, and what they should aim at, and what they might hope the future should be. He wondered what they really meant by education. At present it was a sort of mental machinery for pushing round, but nobody asked what it was for or where it was going. Students were plunged into what was called education—a certain amount of geography and arithmetic, and so on, and in a vague sort of way it was supposed to be necessary for living. And so it was, but no general idea of the objective towards which civilisation might be shaped was ever put into their heads.

His first hope would be for the re-casting of education so as to make it, not a preliminary mystification which frightened children, but a kindly introduction into living—an apprenticeship into civilisation. Education of late years had been a growing surprise to him. He never knew work to be mentioned; in fact, he never found work mentioned at all in life, in books, in sermons, in anything. He would like education to take some account of work. Natural education would set about educating various powers in the people and suggesting different types of life. One of his hopes was that it might be made the opening-up of thousands of different types of ambition.

The modern type of education would have to be changed in many ways. They did not want to kill all the productive activity in the country. Many of them would know the remarkable book written by the American, W. James, about ten years ago, entitled "Varieties of Religious Experiences." He was sure there were varieties of social instincts, too, and that an undue number of young people failed in life because an ambition had not been put before them which they could understand while they were young. They were all squeezed through the literary mill. Live ideals had not been put before them in ways they could understand; they were puzzled and confused by books when really they had a love for doing, and if they had been directed to doing things they might have become wonderful people. In the same way nearly everything had become so generalised and made so remote. History, for instance, was vague and remote, and up and down the country people did not know anything about the towns they lived in. He would like these things to be freshly seen so as to strengthen the life of the people to carry on towards some noble end of attainment. There was, for instance, the influence of town love, which was one of the great springs of motive of all ancient life. They had a deep, tremendous, sacred love for Athens. It was the same in the Middle Ages with Florence and Venice; a deep motive power of love in all the citizens; the sense that the city was an entity and an ideal. It gave the citizens the substance of life. It was a thing he hoped they would try one day to get back in England.

Then he would like some endeavour made to clear up their ideas as to what they meant by civilisation. The disease of the time was to take it for granted that they were "It." They were, but they did not seem to ask themselves why they had gloomy, dreary towns, and wretched shanties called railway stations, and slummy streets, and not very water-tight houses in which to live. He hoped, therefore, one day they would clear up what they meant by civilisation and try to get it. The newspapers told them to think imperially and in continents, and why should there not also be similar exhortations to think communally and in cities? It would bring out pride, and they could not go on without pride. They had a lot of things to be proud of, but they had not got enough. Town patriotism and communal spirit were not sufficiently fostered; until they had things they could really prize and be proud of their lives would run thin. He wanted their philosophers to try to deal with the questions of how far they could give substance to the lives of the people, as to how they could become proud. It was even a question of health, for he was sure the modern disease, indigestion, was another form of London; the untidiness and misery of their towns turned in the end to bad health.

A thing which was happening in this generation was that whereas their fathers lived by custom and tradition, they were now living in the age of science. He recognised that, but he did not like it. It was all the more necessary, therefore, that objectives for development should be put before them. He found the change in all sorts of ways. The old building foreman did his work because it had been done that way, but the aptitude for doing it was disappearing because they lived in a scientific age. There must be calculations and experiments of strains and all those sort of things, and the aptitude for doing work by traditional custom was disappearing; hence all the more important was it that they should try to get clear objectives and ambitions for development clearly laid down. There was evidence that people were thinking with an enlarged view of what they had meant and what they did mean by beauty; not something which merely tickled them for the moment, but order and tidiness and sweetness where people lived in great numbers.

Then, again, he would hope for a better understanding of what was meant by art and art education. It seemed sometimes that there was a danger of art education being understood as a sort of endless approach to a goal that was never reached. The goal, of course, was fine production; but they went on educating and educating, and in many cases the goal was never reached. This very education itself might become a disease, and he hoped one day to see art education again approximating to an apprenticeship—that it should lead up to various forms of production. There were two main conceptions of learning and teaching. One came from the clergy—the literary idea, the idea that education should be for ever a study of grammars and forms. They were never up to date with that form of learning. It was the idea that they must be perfectly and finally educated before they ventured on the first step. The other way was the really practical way. Although there might be a certain stratum of preliminary training, in the end the right way to learn the arts, and the only way, was to learn by doing. It was the same with drawing. He was convinced that drawing had been killed by too much teaching. That teaching produced a few experts, but it had killed the general aptitude for drawing. They knew from the evidence found on the walls of old buildings that 200 or 300 years ago everybody drew; there was not such a thing as an ugly scroll. It was curious, but it was in the blood of the people, just as children drew now. They were living in an age when perhaps the only way to maintain the traditions of drawing at all might be to go to school, so long as they got out to work as soon as they could. Art schools should not be mere drawing schools where accomplishment was taught; they should not even be design or craft schools, but they should be centres for keeping alive in society the idea that the mysterious thing "Art" was a great necessity, and that in great cities they could not get along without it, although he was quite ready to interchange the word for words on a much lower plane, viz., tidiness and order and cleanliness.

Another of his hopes was that an attempt might be made to keep the handicrafts alive. While they spent millions in maintaining art schools and building up crafts they were allowing the old English crafts to disappear. He did not know how far they could be saved—possibly not at all. One little thing he would like was to see everybody draw, for it was essential to the maintenance of a high type of civilisation in the future that people should regain the power of drawing. Without drawing people did not see things. Drawing was only another form of writing, and he hoped that children would be assisted to keep in being their power of drawing.

He would like to see also a clearer idea and better understanding of what was meant by that mysterious word "architecture." It was a bogey word, and had destroyed the very thing it talked about. There was nothing mysterious in architecture. It was only building pig-styes and houses and big buildings. It was a thing they were all concerned in and needed to understand. Until they distributed the interest, all those things went on which they saw in Oxford-street and Tottenham Court-road, and that wonderful corner of the latter road which led into Oxford-street—that was civilisation. They must put aside the idea of genius architecture and ask for a more common-sense way of building. The little word "Art" had been made as mysterious a bogey as architecture and poetry and all the other things. Art had come really to be narrowed to oil pictures in the general conception, which once a year were gathered together in the Royal Academy. He hoped it would come to be understood that all works of skill to which they could apply the idea of good quality was really art. In his young and æsthetic days he remembered being puzzled when William Morris said he thought a good deal of cooking. He thought then it was vulgar, but now he had come to see that unless he cared for cooking as an art he could not care for anything else. All the works of quality that men carried on were arts, and it was a very curious question as to which should be gathered up and called arts of genius and which should be beaten down and called drudgery or whatever they liked. It would be an interesting subject for inquiry why a certain job on canvas should be considered a wonderful art. There was some of it which was wonderfully skilful, but really anyone who could learn to cook could learn to "cook" an ordinary picture. The word artist had been narrowed down to that, and they had to turn back, because the very ability to paint a little water-colour would disappear unless they broadened the basis of art.

Harrow War Memorial.

The General Committee of the Harrow School War Memorial has adopted a report of the Executive Committee, which stated that it had now acquired the site necessary for the memorial. It comprised the space lying between the chapel and the Old School at present occupied by Dame Armstrong's, Moss's, and Cruikshank's houses. The architect, Mr. Baker, had prepared plans which provided for (*a*) the laying-out in an architectural manner of the triangular piece of land at the south of the site; (*b*) the erection of the Memorial Cross immediately opposite the centre of the west end of the chapel; and (*c*) the construction of the memorial buildings. On the ground floor these buildings consist of a shrine, on the walls of which the names of those who have fallen will be inscribed, a columned and vaulted loggia which will provide a ceremonial entrance to the Speech Room, and necessary offices. In the centre of the loggia a staircase, occupying the whole of the back of the centre block, ascends to the first floor in two easy flights of steps. The first floor will be occupied by three large portrait galleries and meeting rooms. It was proposed to proceed with the laying-out of the triangular piece of land, and the erection of the cross and the shrine, but not the hall over it. The estimated cost of the work now proposed amounts to £30,000.

THE CITY CHURCHES.

In June, 1920, the President of the Royal Academy invited the principal bodies in London representing architecture, art and archæology to confer together on the recommendations of the City of London Churches Commission, 1919.

Twelve societies or institutions nominated representatives as follows :—

Royal Academy of Arts.—Sir Aston Webb, K.C.V.O., C.B., P.R.A., and Mr. J. Seymour Lucas, R.A.

National Trust.—The Earl of Plymouth, Mr. Nigel Bond, and Mr. S. H. Hamer.

Society for the Protection of Ancient Buildings.—Earl Ferrers, and the Rev. T. T. Norgate.

Society of Antiquaries.—Sir Hercules Read, P.S.A., and Mr. C. R. Peers.

Victoria and Albert Museum.—Sir Cecil H. Smith, C.V.O.

Royal Institute of British Architects.—Mr. J. W. Simpson, P.R.I.B.A., and Mr. George Hubbard, F.S.A., F.R.I.B.A.

London Society.—Sir Reginald Blomfield, R.A., Litt.D., and Mr. Carmichael Thomas.

City Churches Preservation Society.—Mr. Edwin Freshfield.

London Survey Committee.—Mr. Philip Norman, LL.D., F.S.A.

Civic Arts Association.—Mr. Edward Warren, F.S.A., F.R.I.B.A., and Mr. Arthur Stratton.

British Archæological Association.—Mr. Charles E. Keyser, F.S.A.

Metropolitan Public Gardens Association.—Mr. Bernard Gibson, and Mr. Basil Holmes.

Conferences were accordingly held at the Royal Academy, and it was decided to submit the following considerations, recommendations and suggestions for the consideration of the Bishop of London :—

At a time when the worship of material success has secured a hold upon such large numbers of the people of this country, it is, in our opinion, a most dangerous policy for those in power to diminish the number of churches in a commercial centre like the City of London, where, whether in actual use or not, they do at least serve as reminders that there are other and worthier goals than the acquisition of wealth alone.

We feel strongly that an evil precedent will be created if the Church of England is a party to the destruction of monuments of the past which are irreplaceable; and we are glad to find that Lord Hugh Cecil, in his Note appended to the Report of the Commission, in some degree shares our misgivings on this point. Further, the fact that the monuments are churches, on the one hand, and on the other that the consideration is a monetary one, will, in our judgment, re-act upon the Church itself in a mischievous way.

There is the further argument, set out by Mr. Edwin Freshfield, that the churches built after the Great Fire were not a gift to the church; they were rebuilt by taxation of the people, and they are supported by rating in lieu of tithes, a fact that is not brought out in the Report of the Commission.

The City Corporation has entered a strong protest against the removal of these churches, and in our opinion far stronger reasons than those at present put forward are required to justify the destruction of these buildings and the disposal of their sites in order to erect churches in other places unconnected with the City, and for people whose duty it is to provide their own churches, and whose increased incomes should make it possible for them to do so.

Independently of the actual legal ownership of the churches, we consider it important to remember that in a sense they are the inheritance, not of the diocese of London, nor even of the people of this country alone, but equally of our kinsmen of the Colonies and Dominions, who are as a rule possessed of a more reverent spirit than ourselves for such memorials of the past, and who, it can hardly be doubted, will regard the proposed destruction with dismay and regret.

We are well aware that there is already throughout the country a tendency to destroy ancient remains, either through ignorance or from the prevalence of a too commercial spirit. If London were to set an example of such wholesale destruction as is now proposed, it would, in our opinion, have a fatal effect over the kingdom at large, and lead to the disappearance of much that is precious.

Although the fabrics of the churches are no doubt the main subject to consider, it has to be borne in mind, in addition, that they frequently contain memorials of distinguished citizens, intimately associated with the history of the City or of the country. Removal of the buildings would assuredly destroy the significance of such memorials, even if they continued to exist elsewhere.

There is further the question of the equipment of these buildings, not only of a structural character, such as woodwork, glass and bells, but more portable objects such as plate; in many instances these have been dedicated to the service of an individual church, and their alienation would involve the destruction of important historical data.

It is evident that, in the case of some churches, the great value of the site lies in the churchyards. These are at present protected by Act of Parliament; but it would be a flagrant reversal of the public policy of the last thirty years if these, almost the only remaining open spaces in the City, were to be covered with buildings. If and when such a proposal becomes imminent, it is certain that the public will enter a vigorous protest, quite apart from the question of the consecration of the land itself.

We recognise that the distinguished gentlemen who formed the Commission were amply qualified to decide upon the greater part of the issues involved; but we venture to demur, with all respect, to accepting them as authorities upon artistic and architectural questions. We think that our reluctance is justified by the suggestions in the Report (*a*) that in seven cases the body of the church should be demolished and the tower left standing, and (*b*) that in some cases the internal fittings might be preserved for use in another church. We regard both these proposals as architecturally and artistically improper.

In the same way we consider it is not a solution to remove and re-erect these churches elsewhere. It would be an artistic blunder to re-erect them in any surroundings not identical with the original sites. Archæologically it would be dishonest. Moreover, many of the churches in plan and construction would be singularly unsuited to the needs of a suburban parish.

For the foregoing reasons we desire to protest emphatically against the destruction of the nineteen churches scheduled by the Commission. We notice that the Commissioners used the phrase that "due reverence" should be observed in devoting some of these sacred buildings to secular uses. We would venture to say that to recommend the destruction of any one of them can hardly conduce to their reverent treatment.

(Signed) Aston Webb,
Chairman.

In July, 1920, this Memorial was forwarded to the Bishop of London, who has sent the following reply :—

Fulham Palace, S.W.6.
February 16th, 1921.

Dear Sir Aston Webb,—Thank you for your letter of the 14th instant, on the subject of the City churches.

I can assure you that no wholesale demolition of nineteen City churches is contemplated. At the present time I am giving my mind to the question of grouping certain of the City parishes, or the possibility of uniting them with poor parishes in the suburbs.

It is possible that some few may eventually have to be pulled down or removed, but this would only be done after grave consideration of every case and due regard to the general welfare of the Church at large.

While I hate myself to remove any old church I cannot shut my eyes to the pressing question of the poverty of the Clergy, and the provision of the spiritual needs of people who have at present no church at all and no means of providing one.

Yours sincerely,
(Signed) A. F. London.

BOOKS.

Conifers and their Characteristics. By C. Coltman-Rogers. London: John Murray. Price 21s. net.

In this book of over three hundred pages the student and lover of trees will find a mine of information on all trees included in the natural order of Coniferæ. The author does not attempt to deal with his subject in the terse and uniform method often employed by writers of text books, and the work is not a mere catalogue of distinctions and characteristics, but is written in a readable style. The author evidently loves his trees and regards them more in the light of personal friends than botanical specimens, but none the less he crowds in upon the reader a wealth of horticultural and botanical description. No secret is made of the difficulties of classification, and we imagine the layman will regard some of the rather nebulous distinctions given as matters best left to specialists. At the end of the volume, however, laying aside his attractive conversational style, the author presents us with nearly fifty pages of closely-printed tables for the identification of these forest trees, the compilation of which must have involved considerable labour and certainly shows a very intimate acquaintance with his subject. To all those interested in growing timber and to the student whose future work will be associated with forestry, we commend this book.

Outlines of Industrial Administration. By Messrs. Herford Hildage & Jenkins. London: Sir Isaac Pitman & Sons Price 6s. net.

his book of 120 pages presents the substance a course of lectures at Sheffield University. It is divided into seven chapters dealing with the various aspects of business management. The first—a short one—deals with finance, and includes a brief survey of such things as capital, turnover, profit, and control. The second discusses the lay-out of works and buildings and the relation of such matters to efficient working. Next we have an interesting illustrated account of works transport in which various forms of conveyors are described. Production, design, and inspection of products and personnel are dealt with in the three succeeding divisions of the book, the last including some comment on material surroundings and education. Lastly, there is a chapter on sales management, which shows the important relation between the success of this department and the manufacturing efficiency of the works. We are all aware of the effect of "new blood" in pushing languishing sales, and many have more to learn in this than in other directions. To the works manager, superintendent, and even director of business concerns, this book may be commended. It is necessarily largely suggestive only where so wide a field is covered, but its small compass will attract many who would "shy" at a more comprehensive volume.

Domestic Fuel Consumption. By A. H. Barker, B.A., B.Sc. (Whitworth Scholar). London: Constable & Co., Ltd. Price 14s. net.

This is a well-written book upon a subject which the author has made his own. The articles forming the book originally appeared in the columns of *The Builder*, where they were read with interest. They have now been expanded to form the present book. It is said that of the two classes of smoke abatement legislation required to be dealt with, viz., that of industrial smoke and domestic smoke, the latter is the more difficult. The problem of domestic fuel consumption is one which should be understood by every householder. The average kitchen range is probably the worst offender in "eating up" domestic fuel, with its attendant pollution of the atmosphere by smoke. The author discusses in a practical manner the various forms of fuel, such as coal, gas and electricity; and seems to point to gas as the best medium for cooking and preventing the waste of coal. The work is well written and painstaking, and the author gives illustrations of how to read a gas or electric meter; and explains what is meant by the British Thermal Unit of heat with regard to gas and electricity.

A CONTRAST BETWEEN ENGLISH AND AMERICAN METHODS IN BUILDING,—1.

By C. L. MORGAN, A.R.I.B.A. (Sometime School Architect, City of Vancouver.)

WE, in this country, have much to learn from the methods, ingenuity and skill in handling work and in obtaining results in output practised by the American and Canadian contractor in the erection of a building. The American contractor brings vision, foresight, and organisation to his aid in helping to solve the question of speedily erecting a building. An essentially practical use of science as applied to the problem is brought to bear, and he has, by eliminating many of the time-honoured methods in use in this country, succeeded in reducing fatigue and saving the energy of the worker.

The two countries, America and England, stand to-day upon a par; both are about equal as regards working hours and rates of pay of the workers in the building industry (taking into account the rate of exchange), but there is no doubt that we as a nation are falling behind in the race, and unless our operatives bestir themselves by increasing their output, and bringing both the quality and quantity of their work up to the level obtaining in 1914, unemployment will become even worse than it is to-day. I will give only one example, but it can be taken as typical of many, of the time taken in erecting a building in reinforced concrete in America for which I was the architect, by methods which I shall hereafter describe. I would point out that the results accomplished in America, both as regards time and output, were largely contributed to by workers of British nationality; and if they can be accomplished there, why not in this country too? For instance, the time actually taken for the erection of the concrete frame for a building measuring 280 ft. long by 75 ft. wide and 52 ft. high, and containing five floors, was fourteen weeks—the work being partly done during the early winter months. The locality in America where the work was done is situated upon the 52nd parallel of latitude, or the same approximately as that of London, and the winter climate is therefore much the same as that experienced in the vicinity of London or the south of England.

Generally speaking in countries such as America and Canada where high wages are paid, and where trade unions and Industrial Workers of the World, etc., are highly-organised bodies, there is a much higher standard of efficiency than obtains in this country. Accidents, too, in spite of the greater use of machinery, are of less frequent occurrence than with us.

Taking the system broadly, and analysing the methods used by which these results are obtained, the system will be found to fall under three principal heads:

(1) The human element.
(2) Foresight.
(3) Organisation.

The first is the manner in which the human element is handled. Taking 100 per cent. as an efficiency standard, the contractor and his agents will work to this throughout all the operations entailed in the erection of a building. Concrete, reinforced with either a steel frame or bars, for buildings of ten, twenty, or more stories in height is the principal form of construction in use for modern buildings in America. The various operations, such as the making of forms for the concrete construction, the bricklaying, the masonry, the carpenters' work in laying floors and providing finishings (or "trim," as it is called), the painters' work, etc., will all be placed in the hands of a "straw boss" or foreman, whose energy is directed to the maintenance of the efficiency standard. Great care and foresight are shown in fixing the mills (or mixers) and hoists in the most efficient positions on the site for the economical handling of the materials and for saving labour. In positions adjacent to the mixers and hoists will be found spaces allocated as dumps for materials, and to these the various materials required are delivered. By this method much useless labour in the re-handling of different materials is eliminated, and an immense gain is effected in the saving of labour and in the maintenance of an orderly service during the whole of the time the works are under construction. Indeed, the saving alone to the contractor due to foresight and the saving of unnecessary labour in this initial respect will pay twice over for the machinery required for the work.

The material required, whether it be for the laying of a floor, or brickwork, or the setting of masonry, or whatever is required, is placed in sufficient quantities and in the best position within easy reach of the worker; and from the commencement of the day's work until it is finished the worker is kept supplied with his material and is not allowed far away from his particular job. The turning over of the materials by the workmen before using is never seen. The worker is told that what is expected of him is to lay the floors or the bricks, or whatever is his job, and no time is wasted in talking or in aimlessly running about from one part to another of a building.

The carpenters are usually the first men engaged on the job; and they will be employed for about three weeks in making the forms for the concrete construction, and in fitting and assembling the material for the hoist. Simultaneously with this, the steam shovel will be at work in excavating a basement, or rather what is better termed a ground floor. The actual work of construction is started by placing the required reinforcement for the columns. The foundation is put in, and the forms which the carpenters have been preparing are then fixed and the pouring of the columns commenced. The columns are built up about three feet at a time, the concrete being consolidated with an iron tamper. Next the beam forms and their reinforcements are fixed and the concrete for these is poured; afterwards the same operation is performed in running the floor slabs. The bays for the floor construction are filled simultaneously from both sides of the building, the work being finished in the centre.

The process I have described is for one complete story of a building, and this operation is, of course, repeated in constructing all the other stories.

As to the formwork: the beams and floors are supported upon ordinary fir or deal boards about 1 in. thick, and the soffits for beams are in their turn supported by rows of wooden posts placed about 8 feet apart. These posts rest upon planks, and are wedged up from the bottom so that they are easily struck at the required time without jarring the frame. Both sides of the beam forms are also made so as to be easily removable. It is a frequent practice to remove both sides of the beam forms between the fourteenth and twenty-first day after they have been poured, in order to allow the air to get at the beams and harden them off. Timber being both plentiful and cheap, particularly in the western provinces of America, there is, I regret to say, a shocking wastage. Transport is both difficult and costly, and the contractors say they find it cheaper to burn the formwork on the site rather than pay the cost of removing it to another job. In this way much valuable work is lost, and it is common in the western provinces to see thousands of feet of board burnt on the site upon completion of the concrete frame.

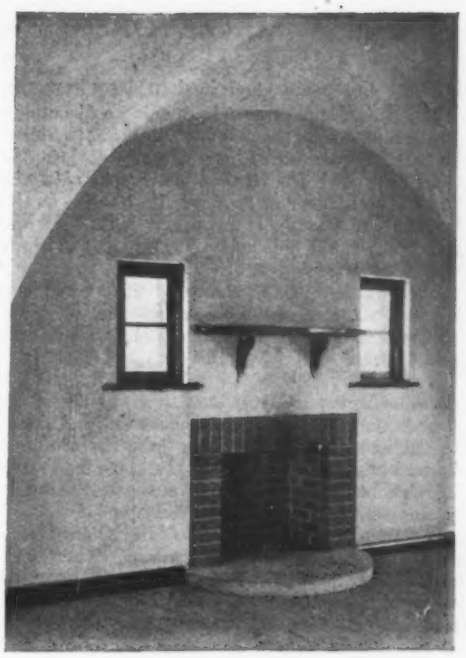
Under the system of construction I have described, it takes from two to three weeks to prepare and make the wooden forms and framework for each story of a building. Roughly, the labour of some twelve carpenters, varying of course, with the size of a building, will be employed for, say, three weeks in constructing the forms necessary for erecting the first two stories of a building—and it takes roughly from two to three weeks to place the concrete for each story. Except for the "straw boss" and the two men working the mill and the hoist the labour is all classed as "unskilled." It will be seen, therefore, that the item of labour in making the forms is about equal to the amount expended on labour in erecting each story of a building. It is possible for much money spent for both labour and material to be saved here.

By the time the work has reached the second story it is possible to strike a good many of the forms which have been used in forming the ground story, and by a small adaptation these can be re-used for the construction of the remaining stories.

The excavation is done by means of steam shovels instead of by the more costly method of hand labour, and the mixing of the concrete and mortar, etc., is also performed by machinery. The materials composing the concrete or mortar are placed in the mixer in the required proportions, and are tipped direct from the machine into two-wheeled barrows. The barrows are placed upon a hoist and delivered to each floor, where labourers are ready to take them from the hoist and wheel and deposit the material with the workers who place it where it is required.

Scaffolding, too, as used in this country is unknown. Instead of the elaborate and costly erections used here, a light and efficient framework and cradle are used in positions only where required for the use of the workers. By this means quite a small army of "skilled" labourers is dispensed with.

These form some of the principal means in eliminating the human element and in keeping the cost within measurable proportions.



An Elliptical Bungalow.

MR. MAURICE S. R. ADAMS, A.R.I.B.A., Architect. (*See p.* 382).

Cardiff Technical College.

The Department of Architecture and Civic Design, which was started less than a year ago at the Technical College, Cardiff, under the headship of Mr. W. S. Purchon, M.A., A.R.I.B.A., made such a promising start that the appointment of a full-time assistant became a necessity, and at a meeting of the City Council on March 14 Mr. Richard H. Winder, M.A., A.R.I.B.A., of Oldham, was appointed to this position. Mr. Winder, who studied under Professor Dickie at the University of Manchester, obtained the degree of B.A. with First-class Honours in Architecture, and after a period of post-graduate study was awarded the Master's degree.

THE SURVEYORS' INSTITUTION.

Building Conversion and Modern Requirements.

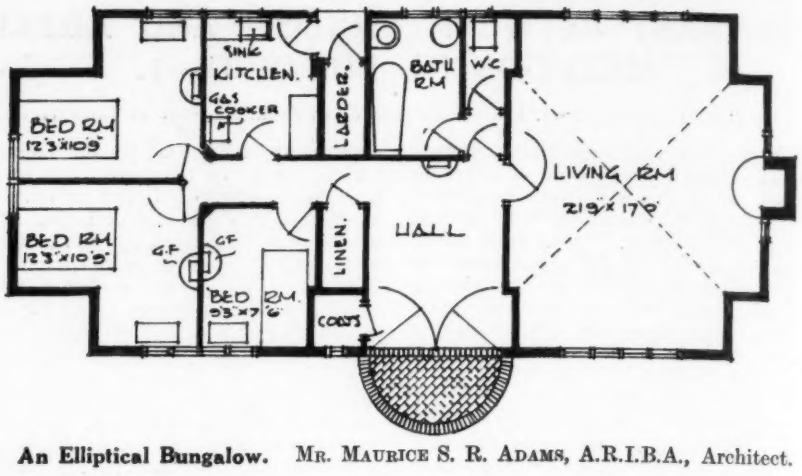
MR. J. G. ELSWORTHY, in opening a discussion on "The Conversion of Buildings to Meet Modern Requirements," at a junior meeting of the Surveyors' Institution last week, said the housing shortage had brought the subject to the fore. To all classes of property certain general principles could be applied. The chief of these was that the larger the amount of property concerned the easier became the conversion scheme. It was simpler when the unit for conversion was two houses rather than one, and simpler still when it was more than two. In these days, with the prevailing high costs dominating every consideration, it might be found that the cost of conversion prohibited the scheme altogether. The first three classes he had enumerated fell into the same category; isolated large houses in the country and suburbs presented problems peculiar to themselves.

As to terrace houses, assuming there was a block of, say, three or four houses either semi-detached or built in a terrace, it might be worth while to examine what the possibilities were with a view to conversion into flats. The flat most in demand was one with three bedrooms, two sitting-rooms, a kitchen, and a bathroom. Assuming there were three terrace houses, the first effort should be made with a view to doing away with two entrances and two of the staircases, the three ground floors being made intercommunicating through openings in the party-walls. The space formerly occupied by the halls could be utilised for bathrooms and kitchens, and probably it would be found that with a certain re-arrangement two flats could be obtained on the floor, all rooms being on the same level. The upper floors could be treated in the same way. In the case of a large block of property, say, six or eight houses, with gardens at the rear and access through these gardens to some road frontage, also at the rear, it might be profitable to scrap all existing extrance halls and staircases, and to build or arrange for a fresh staircase and entrance at the rear of the property. People did not spend a great deal of their time on the staircase, and it seemed a pity that valuable space, probably looking out on to a good road, should be wasted.

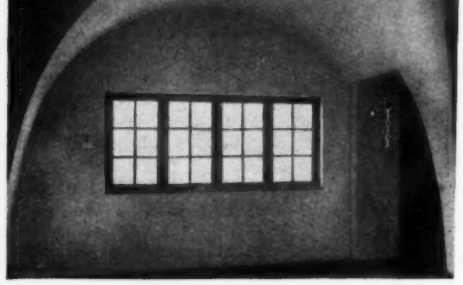
One of the chief difficulties in the conversion of buildings lay in the basement. People did not like basement flats, even when they were camouflaged under the name of "lower-ground-floor." If there was a wide forecourt or front garden it was generally possible to slope the ground from the garden wall down to the level of the basement. If this method were adopted, the disadvantages of the basement were largely minimised. If this was not possible in front of the house, it was generally possible at the rear. In the case of houses where it was impossible, either in the front or the rear, it would probably be cheaper in the long run to leave out the basement entirely and use it for cellarage.

If a block of houses such as he had indicated was to be dealt with for residential purposes, it would probably be found that if the party-walls between six gardens were taken down there would be room for one, if not two, tennis courts. This was another attraction which would help to outweigh many of the disadvantages in an adapted building.

A converted house could hardly be made the same as a block of properly-built flats, and there would be a very great danger, when the present difficulties with regard to building were overcome and new buildings erected, that these converted houses would be left on hand unless they could offer all the attractions possible in the way of labour-saving devices. It would, therefore, be a good policy to install plenty of electric plugs for vacuum cleaners, electric fans and heaters, and to arrange for a system of internal telephones where the flat was of considerable size. It was also very desirable to have all the pipes inserted in hinged casements so that they could be readily got at without the necessity for damaging walls in order to effect a simple repair. It was also very desirable to provide means of easy access to the roof. As to water supply, drainage, and lighting, the main principle to be kept in mind seemed to be the utilisation, so far as possible, of existing supplies. The ideal method would be to scrap existing systems and lay one consolidated electric system for the whole block, and also a consolidated system for water, and probably central heating. Generally, however, these ideal arrangements were prevented by their cost. The aim, therefore, should be to utilise the existing supplies, and to make each flat as self-contained as it could be. Gas geysers, hot-water heaters and gas-cookers would greatly help in this connection.



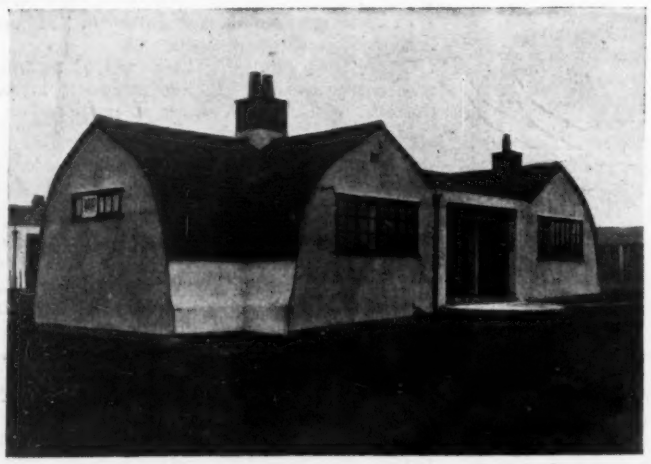
An Elliptical Bungalow. MR. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.

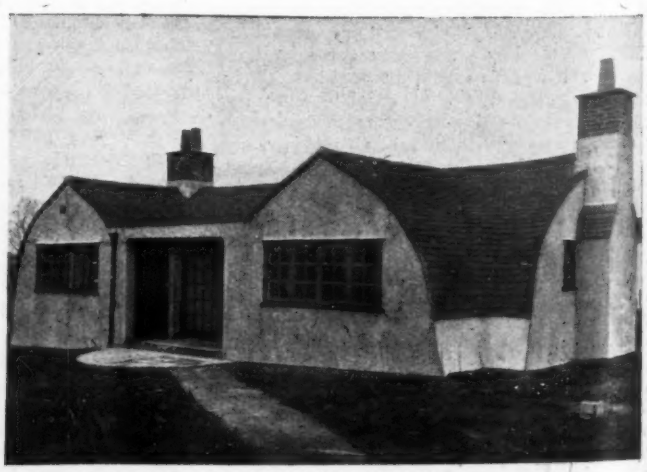


AN ELLIPTICAL BUNGALOW.

THE semi-elliptical vaulted concrete bungalows illustrated on this page have been built from the designs of Mr. Maurice S. R. Adams, A.R.I.B.A., of Marlborough-crescent, Bedford Park, W. 4, who has sent us the following notes:—

"These buildings differ widely in construction and design from accepted methods. Construction throughout is with pre-cast concrete blocks, erected after the manner of Gothic vaults, but without ribs. The system was not introduced without some difficulty, many problems as to the best method of working having to be solved, so that the buildings must be regarded as experimental and capable of improvement. There are no voids or waste spaces; the outer and inner forms being identical. The tiles are nailed direct to the vaults without laths. Floors are solid and boarded; inside walls plastered. The vaulted living-rooms form the principal feature, proving very attractive when suitably furnished on simple decorative lines. The glazed doors to hall fold back so as to combine verandah and hall into a garden room for summer use. The buildings are, of course, fireproof. Although unusual the appearance is nevertheless architectural, the construction being quite naturally expressed in the outer forms."





An Elliptical Bungalow MR. MAURICE S. R. ADAMS, A.R.I.B.A., Architect.

LEGAL SECTION.

NOTES ON CURRENT CASES.

INCREASE OF RENT ACT.

Contracting Out.

In the case Barton *v.* Fincham (*Weekly Notes*, February 26) the point was raised as to whether parties could contract out of the Rent Act. The defendant had for some twelve years been the tenant of a house at Thornton Heath, to which the Act applied, at a weekly rent of 12s., collected monthly. In July, 1920, the plaintiff had purchased the house subject to this tenancy, and as he desired to sell the house with vacant possession he had entered into an agreement with the defendant that if she would give him notice to quit and would yield up possession at Michaelmas, 1920, he would pay her £20. This agreement was put into writing, the £20 was paid, and the defendant gave the notice to quit. When Michaelmas arrived the defendant refused to give up possession, and did not pay back or tender the £20.

The plaintiff then brought these proceedings to recover possession of the premises, and the county court judge had made an order for possession. The defendant had appealed, and as the Divisional Court was divided in opinion the judgment of the county court judge had stood. The judges in the Divisional Court had agreed that the plaintiff could not rely upon the notice to quit under Section 5 subs. (1) (*c*), as he had not complied with the subsection in showing that he would be seriously prejudiced if he could not obtain possession, but they disagreed as to the effect of the defendant's agreement to give up possession. Mr. Justice Lush considered that such an agreement was unenforceable, and Mr. Justice McCardie took the opposite view.

On further appeal the Court of Appeal held that Section 5 absolutely restricted the jurisdiction of the court in making orders for possession to the grounds specified in that section, and that no agreement between the parties could give the court a discretion to exercise its jurisdiction beyond the limits prescribed. This decision is clear, but in the course of the argument a point was made which had much impressed the Divisional Court, for attention was drawn to Section 15, subs. (2), which deals with statutory tenants holding over under the provisions of the Act. That subsection is as follows: "Any tenant retaining possession as aforesaid shall not as a condition of giving up possession ask or receive the payment of any sum or the giving of any other consideration by any person other than the landlord. . . " The Court of Appeal only intimated (so far as the case is at present reported), that this section did not indicate any intention on the part of the legislature to recognise contracting out on the part of the landlord and tenant.

It may be difficult to see the application of this subsection, but in the light of the limitation placed upon it above we can only suggest that its intention is to prevent statutory tenants from making bargains with persons who are to have possession from the landlord after he has obtained possession from the sitting or statutory tenant. It does not evidently apply to the assignment of the residue of an existing tenancy (see Mason, Herring and Brooks *v.* Harris, *The Builder*, February 25), but only to tenants holding over.

Recovering Excess Rent.

The case of Rawlinson *v.* Alger (*Weekly Notes* March 5) illustrates the complication of this legislation. The plaintiff was suing for three months' rent, and the tenant was counterclaiming for the repayment of certain sums paid since 1915 as rent which exceeded the standard rent less a certain period during which he had agreed to waive his claim. The question for the court was whether under the Increase of Rent Act, 1920, these sums paid in excess of the standard rent could be recovered.

Under the Increase of Rent Act, 1915, it was held in the case Sharp Brothers and Knight *v.* Chant (*The Builder*, March 9, 1917) that, although payments of rent were made irrecoverable by the landlord, yet if they were paid by the tenant he could not recover the excess he had paid. To remedy this it was enacted in Section 5, subs. (1) of the Courts Emergency Powers Act, 1917, that excesses so paid by tenants could be recovered or deducted from future payments of rent within six months of the date of payment. In the Increase of Rent Act, 1920, this limit of six months was removed, and by Section 14, subs. (1) such payments of rent in excess of the standard rent which were made irrecoverable by the landlord from the tenant can, if paid, be recovered back from the landlord. But by Section 19, subs. (3), the Increase of Rent Act, 1915, and Section 5 of the Courts Emergency Powers Act, 1917, were repealed, "Provided that, without prejudice to the operation of Section 38 of the Interpretation Act, 1889, nothing in this repeal shall render recoverable any sums which at the time of the passing of this Act were irrecoverable," and the Court interpreted this subsection as follows:—The object of the Act of 1920 was two-fold: First, to enlarge by Section 14 the tenant's right to recover or set off sums overpaid; second, by Section 19, subs. (3), not to revive rights which were not *in esse* at the time of the passing of the Act. The Court, therefore, held that in this case, as the sums claimed to be set off by the tenant were admittedly irrecoverable at the time of the passing of the Act of 1920, Section 14 read with Section 19 did not make them recoverable, and the county court judge was wrong in allowing them to be set off. How can the unfortunate layman be expected to pick his way through such a morass of legislation?

Soldier Tenants.

The recent case Messenger *v.* Hutton (*Weekly Notes*, March 12, and *The Times*, March 4) again raised the question as to the meaning of Section 5, subs. (1) (*g*), which relates to obtaining possession for former tenants who have given up possession in order to serve with the Forces. The plaintiff was a married woman, and the house had been given to her as a wedding present. There was an arrangement by which the husband paid the wife £3 a week for household expenses and £1 a week as rent. He was rated as occupier and had a vote in respect of the premises. In November, 1916, he joined the Navy, but continued to pay the £1 a week to his wife until in 1917 the plaintiff let her house to the defendant on a three years' tenancy and went to live with her father close by. In 1919 the husband was demobilised and came back to his wife, who was living with her father, but they desired to live in their own house and the defendant was willing to quit if she could find accommodation. There was a house for sale, and the defendant bought this, but the tenant of that house declined to give possession and proceedings against him had failed because suitable alternative accommodation was not proved. In June, 1920, the defendant's term expired, but as she could not get possession of the house she had bought she declined to give up possession of the plaintiff's house and the plaintiff brought this action for possession under Section 5, subs. (1) (*g*) on the grounds that the "dwelling-house was required for occupation as a residence by a former tenant thereof, who gave up occupation in consequence of his service in His Majesty's Forces during the war."

The county court judge had held that the husband was such a former tenant, and made an order for possession, and the Divisional Court declined to disturb the judgment as the questions as to whether possession had really been given up on account of the husband's service, whether he was a tenant, and whether in the circumstances it was reasonable to grant possession when the plaintiffs could live with the plaintiff's father, were all questions of fact. The court, however, rather intimated that they might have come to a different decision from the county court judge had they been trying the case at first instance on the questions whether possession had been given up in consequence of service in the Forces, as the wife had continued in occupation some months after her husband had joined, and as to the reasonableness of seeking the order for possession.

The important point in the case, however, is this—it was argued that the decision of Mr. Justice Avory in Goodwin *v.* Rhodes (*The Builder*, February 5) was wrong, and that the true construction of paragraph (*g*) was that the "former tenant" must himself have been the lessee of the premises who had sublet them on giving up possession to join the Forces. The Divisional Court negatived this contention, and affirmed the decision in Goodwin *v.* Rhodes that the meaning of the paragraph was that the house was required by the landlord for a former tenant who had given up possession in order to join the Forces in the war.

Landlord v. Tenant: Licence to Assign.

It is usual to insert in leases a clause that the tenant shall not assign the premises without the written consent of the landlord, but that such consent shall not unreasonably be withheld in the case of a respectable and responsible person.

It has recently been held in the case *in re* Winfrey: Chatterton *v.* Evison (*Weekly Notes*, March 5) that within the meaning of this clause permission cannot be withheld in order to enable the lessor to regain possession of the premises before the termination of the term, and that where the consent is withheld with this object the tenant can assign without obtaining the lessor's licence. Of course, the leave or licence must first be applied for (Barrow *v.* Isaacs, 1891, 1 Q.B., 417).

On this question of assignment another case, Ideal Film Renting Company, Ltd., *v.* Nielson (*Weekly Notes*, March 5), decided some points of interest. The plaintiffs were a company which held certain premises under leases granted in March, 1914, and July, 1917, respectively, in which the lessees covenanted not to assign without the previous consent in writing of the lessor, but the lessor covenanted not to withhold such consent unreasonably in the case of a respectable and responsible assignee or under-tenant. The plaintiff company, owing to increasing business and to provide more capital, had passed resolutions for a voluntary winding-up of the company, and a liquidator had been appointed who was empowered to enter into an agreement with a new company. The new company had a very considerably larger paid-up capital than the old company, and the directors of the old company were with the same staff to carry on the business of the new company. The lessor (the defendant) had been informed of the material facts, and had been offered any further information he should desire, but he had declined to consent to the assignment of the residue of the term of the two leases on the two main grounds that it was a new company which had not carried on business so far, and that it was about to engage in a speculative business of film producing. The original company had, in fact, carried on the business of film producing as well as film renting. The court held that the defendant's refusal to grant the lease or licence was unreasonable, and that the plaintiffs were entitled to carry out the assignment without leave.

But the interesting point of law in this case was the effect of the two covenants—that of the lessees not to assign without leave, and that on the part of the lessor not to withhold

consent unreasonably. The court, in the course of the judgment, pointed out that it was settled law that if the form of the first covenant was merely qualified by a provision that the consent of the lessor was not to be unreasonably withheld it did not amount to an express covenant by the lessor that he would not unreasonably withhold his consent, and in the absence of such an express covenant by the lessor no action would lie against him for damages for unreasonably withholding his consent. Here there was no qualification in the first covenant, by which the lessee simply covenanted not to assign without leave, and the qualifying element was introduced as an express covenant by the lessor. The court held that this separation of the covenants did not place the lessee in a worse position than if there had been one qualified covenant, as he could assign without consent if leave was unreasonably withheld; and he had the further remedy of damages under the express covenant of the lessor. No damages were claimed in this case, but the defendant was ordered to pay the costs of the action.

To make the matter quite plain, we may state that if the covenant is in the form that the lessee shall not assign without leave, but that leave shall not unreasonably be withheld. this is not an express covenant on the part of the lessor that he will not unreasonably withhold his consent. In such a case the lessee, if leave is unreasonably withheld, can assign without leave, but he cannot claim damages for the withholding of the consent. If the lessor expressly covenants not unreasonably to withhold his consent, then damages, if they can be proved, can be obtained.

THE PRICE OF BUILDING MATERIALS.

THE Report on Light Castings prepared by a Sectional Committee of the Sub-Committee on Building Materials appointed by the Standing Committee on the investigation of prices and trusts under the Profiteering Acts states that the profits in the trade have not been unreasonable.

The light castings industry, it is stated, is a branch of the iron-founding industry which specialises upon the production of iron castings used in house building, such as grates, stoves, mantels, registers, rainwater pipes, baths, &c. In a summary of its findings, the Sub-Committee states there is in the light castings industry a trade combination, the National Light Castings Association, which covers ninety-five per cent. of the British output of light castings, and among the distributors there is a trade combination, the Builders' Merchants' Central Committee, which represents almost the whole distributing trade.

The Association fixes a minimum price below which its members may not sell it; it penalises any member who increases his output and rewards a member who reduces his outturn relative to the rest. Such an arrangement the Committee holds to be contrary to the public interest. It considers that the giving of deferred rates on condition of price maintenance and exclusive dealing should cease.

The minimum fixed by the Association since the Armistice shows a profit which cannot be considered as unreasonable, and the discounts allowed afford a fair and reasonable margin to the distributor. The percentage of profit on goods sold "over the counter" is not unreasonable, and the arrangements between the Association and the Department of Building Material Supplies as regards price and standardisation of manufacture are regarded as satisfactory. Under this arrangement light castings for housing schemes are obtainable, principally as a result of economies in distribution at prices substantially lower than would otherwise be possible.

The Committee states that the powers of an Association which wields such monopolistic control over an industry are so open to abuse as to make it a menace to the community, and urges that such combinations should be brought under the surveillance of a department of State.

NORTHERN POLYTECHNIC INSTITUTE.

THE students of the Department of Architecture, Surveying and Building at the Northern Polytechnic had an exhibition of their work in the large hall of the Institute on the 16th inst. The exhibition, which was the largest and most important ever held by the Department, covered the work of all sections of the School. This included the School of Architecture, School of Surveying, and School of Building, Senior Day and Evening Sections; School of Building Crafts, Junior Day and Evening Sections.

The outstanding feature of this School is the co-ordination of the work of the architect, the surveyor, the builder and the craftsman. The Architectural Section exhibited work which showed a considerable degree of accomplishment. There are a number of students who have a sound idea of design and of the planning of buildings. Both the draughtsmanship and design have shown great strides in the past twelve months, and are raising the general level of the work to a high standard. Two or three students in the Senior Day School exhibited work which called for special mention, amongst these being Mr. William Sadler. He recently won the British Institution's Scholarship with a good design for an ornamental bridge, the plan being well rendered, but the perspective rather sketchily indicated. It was illustrated in our issue for March 11. His measured drawings of the Fountain Court at Hampton Court were very well presented. Mr. Heard showed some good plans for a pair of town houses, and an attractive half-inch detail for a large cinema. Mr. N. T. Joyce showed drawings for similar buildings, with, however, quite a distinctive character. Other students whose work deserves notice were Messrs. Monk, Rose, Igglesden, Wessen and Beaufoy.

In the Art Section Mr. Filbey showed some able drawings, and we noticed particularly a large detailed drawing of a mosaic panel, 8 ft. by 4 ft., and several sketches illustrating the application of dynamic symmetry to Greek pottery, conventional ornament and free sculpture. Mr. Clark who is, we understand, specialising in scene painting and decoration, is also on the road towards accomplished draughtsmanship.

Amongst the first year architects the composition in Roman ornament by Mr. Arthur Mead was of a sound and commendable type, although the drawing was rather weak.

Amongst the builders, Messrs. Cross, Henwood and Aldridge showed good work.

Noticeable work in other sections was that of Mr. C. W. E. Brown (structural engineering), and Messrs. Ord, Pearson and Fricker (surveying).

The craftwork of the School deserves particular notice, especially the sections devoted to painting, plumbing and masonry letter cutting. It is evident that this school is training students who are fit to enter the highest class of work in each of the building crafts. A feature of the craftwork is the fact that it is all carried out under, as nearly as possible, practical conditions without any unusual preparation.

In the Plumbing School, facilities are provided for practice in wiping joints, sheet lead bossing, pipe bending in lead, iron and copper, lead burning, building up ornamental sheet lead work, and oxy-acetylene welding. All these branches were represented. Mr. G. W. H. Hayward, a senior day school student of only twelve months' standing, had an excellent full-size model of pipe work and milled lead rainwater guttering.

The work of the Junior Day School was divided into first, second and third year, so that the progress of the students could be appreciated. In the third year (average age 16), a fine full-size model of pipe work was shown by F. B. Whiteley and E. J. Childs, a series of wiped joints by G J. Nash and A. E. Burr, and other work of note by W. Conquest, E. Childs, J. Chester, T. Wenham and S. R. Goodman. Ellis, of the first year, shows promise of being an excellent craftsman.

The work of the students of the Evening School was perhaps rather below the level of that of the Day School. The best exhibit was shown by C. Osborn, a second year man. Other good work was executed by C. G. Furby and his brother, F. Hall, Batt C. Finsh, Vincent W. Wright, F. Bennett, D. A. Adams, Armstead and B. Wright. Amongst first year students Messrs. Bowles, Bolge, Cannon and Morgan were the best.

The evening students in carpentry and joinery showed work that was ahead of that of the day students, but much of it is in progress and hardly complete enough to be properly appreciated. There was great promise in the model of an over-door by Mr. J. Tucker, executed from measured drawings of a piece of seventeenth-century work at the Reindeer Inn, Banbury. Some work by H. Wingham attracted attention. Amongst second and first year exhibits the best were those of Messrs. H. Cross, H. Wittingham and H. Marsh.

In the Junior School, H. Broadwater and H. Knight, H. Bishop and S. Remondos—all second year students—exhibited good craftsmanship. Williamson, Cook and Winn were the best in the third year.

The work of the School of Painters, Decorators and Signwriters attracted considerable attention, and reflected great credit upon all concerned. The best work in the Junior School was that by J. A. Evans, W. A. Dickens, J. E. Cundy, C. W. Skelton, H. Siegert, and C. Sharp. The Evening School showed many fine exhibits of graining, marbling and lettering, notably those by Messrs. H. M. Newland, W. E. Batt, F. J. King, H. J. Howard, and W. E. Sharp. Two examples of colour combing and a Roll of Honour by L. Taylor deserve mention. Advanced work showing decoration in painted ornament by J. Sexton gives some indication of the wide scope of the School.

A number of lads in each of the Craft sections will be leaving at the end of April, and we understand that the head of the Department is willing to receive a limited number of applications for placing them with suitable firms.

Several speeches were delivered in the course of the evening. Professor Richardson emphasised the need for simplicity in design.

Sir William Wells, who is building up the College of Estate Management to co-ordinate the system of education for estate agents throughout the country, deprecated the prevalent practice of cramming.

Mr. F. J. Gayer, past President of the London Master Builders' Association, emphasised the need for education amongst both master builders and craftsmen, and pointed out that the conditions of building since the war had become so difficult and the competition so keen that the builder could no longer depend upon rule-of-thumb methods, and the craftsman could no longer have merely a superficial knowledge of his craft.

Mr. Hugh Davis, Inspector of Architectural and Building Schools under the Board of Education, congratulated the head of the Department and the Governors of the Institute upon the extraordinary growth of the Department in the past twelve months, and on the amount and ability of the work displayed.

A vote of thanks was proposed to the foregoing speakers by Dr. Reginald S. Clay, B.A., D.Sc., the Principal, and seconded by Mr. T. P. Bennett, Head of the Department. Mr. Bennett mentioned that the number of students attending the Evening School had risen from 241 in 1913–14 to 461 in 1920–21, and in the Day School from 47 in 1913–14 to 170 in 1920–21. Efforts were being made, he said, to frame the teaching in each section so that it would approximate as nearly as possible to the work that the student would execute in the office or the workshop. As the school advanced he hoped that they would be able to design buildings in the Architectural School, and later make working drawings of them; to pass those drawings to the surveyors to prepare quantities and estimates; to the builders for working details and constructional drawings; and to the craftsmen for the execution of portions of the work in joinery, plumbing, painting and decoration &c.

HOUSING AND TOWN-PLANNING NOTES.

Lavatory Basins in Housing Schemes.

The Wandsworth Borough Council has been informed by the Ministry of Health that fixed lavatory basins in State-aided housing schemes will not rank for the Government grant, and has decided not to install such lavatory basins.

The Cost of House Building.

In the House of Commons last week, Dr. Addison said that there was no foundation for the statement that the cost of the housing scheme was not even approximately known. It was calculated that the maximum immediate charge on the Exchequer, so far as the total Government liability of £200,000,000 was concerned, was approximately £10,000,000 per annum. It was to be anticipated that, in the near future, rents would increase. Moreover, should it become possible, instead of making short-time borrowings, to re-borrow at a lower rate of interest, a fall of 1 per cent. in the rate of interest would represent a reduction of about 3s. per week per house in the Exchequer liability. During recent months a substantial reduction in the cost of housing had been effected. No contracts were being let except at a considerable reduction in the prices prevailing last year.

As the Ministry of Health considers the tenders received by the Malton Rural District Council for its housing scheme are too high, the Council has postponed its housing scheme *sine die*.

The Regional Housing Commissioner has refused to approve the tenders received by the Bridlington Rural District Council for the erection of four houses, on the ground that they are too high, and the Council has decided to take no further steps in the matter.

The Regional Housing Commissioner has intimated that the tenders received for the Woodbridge Rural District Council's housing scheme at Alderton, Bawdsey, Shottisham and Tuddenham are too high, and the Council has decided not to proceed with those schemes at present.

The Lexden and Winstree Rural District Council has decided to defer its housing schemes at West Bergholt, Wormingford, and other parishes, in anticipation of the cost of building coming down.

WEEKLY HOUSING RETURN.

Progress of housing schemes up to March 11:—Schemes submitted, 11,400; approved, 9,011. Lay-out schemes submitted, 7,414; approved, 6,851. House-plans submitted, 296,163 houses; approved, 277,656. Tenders were submitted for 191,005 houses; approved, 176,273. Contracts have been signed for 152,264 houses.

Schemes dealt with during the week ended March 11:—Schemes submitted, 10. Lay-out schemes submitted, 48; approved, 30. House-plans submitted, 703 houses; approved 933. Tenders were submitted for 1760 houses; approved for 321. These schemes include the following:—

Applications.

SITES.

RURAL.—Cannock, 10.85 acres.

LAY-OUTS.

URBAN.—Handsworth, Longbenton, Norden, Tyldesley-with-Shakerley, Welshpool.

RURAL.—Beaminster, Bishopthorpe, Bridport, Calne, Chesterfield, Clun, Doncaster, Foleshill, Hereford, Kingswinford, Knaresborough, Langport, Llanfyllin, Magor, Norham and Islandshires, Norton, Ringwood, St. Faiths, St. Mellons, Tadcaster, Upton-on-Severn, Westhampnett, Wokingham, Woodbridge.

COUNTY COUNCILS.—East Sussex, Lancashire, Warwickshire.

HOUSE-PLANS.

URBAN.—Banbury, 12 houses; Epsom, 100; Hyde, 16; Mitcham, 162; Scarborough, 52; Southwick, 2; Tyldesley-with-Shakerley, 12.

RURAL.—Beaminster, 4 houses; Bishopthorpe, 2; Bridport, 50; Cerne, 6; Crickhowell, 12; E. Westmorland, 6; Evesham, 2; Foleshill, 20; Hereford, 6; Knaresborough, 8; Langport, 16; Llandovery, 4; Martley, 24; Norham and Islandshires, 10; Pembroke, 6; St. Faiths, 8; St. Mellons, 14; Thirsk, 34; Thrapston, 6; Upton-on-Severn, 4; Westhampnett, 10; Woodbridge, 4.

COUNTY COUNCILS.—East Sussex, 3; Lancashire, 16; Warwickshire, 2.

Approvals.

SITES.

RURAL.—Doncaster, 32.17 acres

LAY-OUTS.

URBAN.—Coalville, Ince-in-Makerfield, The Maldens and Coombe.

RURAL.—Ashby-de-la-Zouch, Bishopthorpe, Clun, Foleshill, Hereford, Kettering, Kingswinford, Knaresborough, Langport, Norton, Pontardawe, St. Faiths, Upton-on-Severn, Wokingham, Woodbridge.

COUNTY COUNCILS.—Lancashire, Warwickshire.

HOUSE-PLANS.

URBAN.—Ashburton, 20 houses; Coalville, 478; Hartlepool, 24; Mitcham, 162; Mountain Ash, 24; Southwick, 2.

RURAL.—Ashby-de-la-Zouch, 46 houses; Bishopthorpe, 2; Bridport, 50; Cerne, 6; Evesham, 2; Foleshill, 20; Hereford, 6; Langport, 26; Martley, 24; St. Faiths, 8; Thrapston, 6; Upton-on-Severn, 4; Woodbridge, 4.

COUNTY COUNCILS.—Lancashire, 16 houses; Warwickshire, 2.

Tenders Approved.

URBAN.—Gosforth, 28 houses; Gosport and Alverstoke, 122; Ottery St. Mary, 8; Worsley, 4.

RURAL.—Alnwick, 50 houses; Blaby, 22; Depwade, 16; Newmarket, 8; W. Dean, 22; Woodbridge, 30.

THE COST OF BUILDING DWELLINGS IN SCOTLAND.

THE Government Committee of Inquiry into the High Cost of Building Working-class Dwellings in Scotland held a further series of meetings in Edinburgh last week. Mr. G. W. Currie presided. Witnesses were examined from the Electrical Contractors' Association, Quarrymasters' Association, and the timber trade, and further evidence was submitted by officials of the Board of Health.

The senior partner of a prominent firm of timber importers in Leith submitted evidence as to the cost of timber. In cross-examination he stated that timber had risen 250 per cent. over pre-war prices. This increase was due, he said, to the following causes, apart from the interference with supplies caused by the war:—(1) Government control; (2) war rates of wages; and (3) trade union restrictions. The Government control of timber had played into the hands of monopolists, especially in Sweden, and whilst timber was cheaper by 25 per cent. than it was six months ago the future course of prices depended largely on Sweden. Timber importers were now compelled to employ gangs of eight instead of four men, as in pre-war days, for receiving timber from ships. These men had to be employed for shifts of three hours, even although only a half-hour's work was required. It would not be possible to obtain Russian timber for some years, as, apart from the reluctance of merchants to trade with the Soviet Government, there would be no timber available for shipment until, say, 1925. The discontinuance of excess profits duty would help to bring about an equitable balance of profits. Timber merchants were at present in a position of great anxiety, owing to the large stocks which they had on hand. There was more than sufficient timber in the country to provide for all the houses required.

Mr. Lyall, on behalf of the Electrical Contractors' Association, stated that the electrical work in connection with housing represented only about 1.5 per cent. of the total cost. Contractors had very little difficulty in obtaining raw material. The wages of electricians had increased 200 per cent. over pre-war rates. On examination, he stated that the Board of Health's specification for electrical work was simple, but it would be better to allow electrical contractors a freer hand. There was not sufficient care taken by the authorities to ensure co-ordination amongst the various trades. This affected electrical work particularly, as in some cases electrical contractors, in order to proceed with the fitting of lights, had to undo work which had already been done by other trades.

Mr. William Forrest, on behalf of the Quarrymasters' Association of Scotland, stated that at present practically no profits were being made by quarrymasters, and, owing to the desire of quarrymasters to obtain more widespread use of stone in State housing schemes, the price of stone had not risen to the same extent as had the prices of bricks and other materials. He was of opinion that the houses at present being built of brick were unstable, and would show visible signs of coming to pieces the first hard winter they had to face, and that building in stone would, in the long run, prove cheaper than the present 4½-in. hollow brick walls. When the final costs were made up it would be found that the contract prices for brick houses would be greatly exceeded. Stone was much more suited to the Scottish climate than brick, and the cost of upkeep per annum was much less.

Messrs. McTaggart & Low, Surveyors under the Scottish Board of Health, said the duties of the Board's Surveying Department were chiefly confined to the scrutiny of draft schedules of quantities, tenders and priced schedules of quantities, and final statements of contract accounts. The General Specification, which was issued in December, 1919, indicated in a general manner the materials and forms of construction to be adopted in schedules of quantities for State-aided schemes. Examined on the details of this General Specification, witnesses submitted evidence to show that almost without exception the Specification for the State-aided houses could not be reduced further without harm to the quality and stability of the houses. They explained the stages of the Surveying Department's work, and gave details of the increases in costs of materials and wages from 1914 to 1920. Bricks, which in 1914 cost £1 16s. per 1,000, now cost £4 16s. The building of a 4½-in. brick wall in cement, which in 1914 cost 2s. 1d., now cost 10s. 6d. Walls, which in 1914 cost £1 17s., now cost £4 10s. Timber, which cost £15 per standard in 1914, now cost £62 10s. Wages figured largely in these increases, but they could give no information as to whether reduced output per workman per hour had any effect on the increased costs. There had been a serious lack of competition among contractors, which had had the effect of increasing the cost of building, but conditions in this respect were now improving. They submitted that the savings effected by the issue of the General Specification and scrutiny of priced schedules had resulted in an average saving of £200 per house, which, on the 19,137 houses for which tenders had been approved by the Board to date, represented a total saving to the State of over three and three-quarter million pounds. On the question of stone construction, they stated that the Board was prepared to approve building in stone where this did not cost more than £50 per house over the cost of building in brick. They were of opinion that it should be possible to keep within this limit for stone houses. When the final accounts for the housing schemes came in the cost per house would be greater than the amount of the tenders; this was due to increases in wages and prices of materials which had taken place since the contracts had been entered into, but they did not think that it would be practicable at this stage to give an approximate estimate of what this increase would be.

THE BUILDING TRADE.

SCIENCE APPLIED TO BUILDING PROBLEMS.

CEMENTS.

THE sixth lecture of the series dealing with "Science Applied to Building Problems" was given at the Northern Polytechnic on February 24 by Mr. R. R. Butler, B.Sc., A.I.C., F.C.S., and dealt with the principles underlying the setting of Portland cement, plaster of Paris, and such complex bodies as Sorel cement.

Under the heading of "Silicate" cements, the properties of Roman cement and Portland cement were discussed. The former, he said, originally called Parker's cement, was the result of burning certain naturally occurring argillaceous limestones, and grinding the burnt material so produced. Nodules of suitable raw material were found off the Isle of Sheppey, and at Harwich and Yarmouth. They had the composition

	Per cent.
$CaCO_3$	60—70
SiO_2..	18—20
Alumina	6—10
Fe_2O_3 and MgO ..	Small quantities.

Medina cement, found in the Isle of Wight, was a similar substance.

Roman cement had a specific gravity of 2.5—3, a reddish-brown colour, and took rather longer to set under water than in air.

Portland cement was the finely-pulverised product produced by heating an artificial mixture of clayey and calcareous materials almost to white heat and grinding the resulting clinker. The raw materials included limestone, chalk, marls, clay, shale, slate, blast-furnace slag, &c., and the mixture was heated either in a rotary kiln or in the stationary "two-stage" kiln. Though the raw materials might vary between fairly wide limits, the final composition of the clinker was very constant, a typical analysis showing figures in the region of :—

	Per cent.
CaO	62.50
SiO_2	24.00
Al_2O_3..	6.10
Fe_2O_3	2.44
MgO	1.16
Alkalis	0.41
SO_3	0.40
Water and carbon ..	1.55
Insoluble residue ..	0.44

The lecturer dealt with the British Standard Specification (1915) and demonstrated the chemical principles underlying the requirements of the specification, which were as follows :—

(*a*) The ratio $\frac{CaO}{SiO_2+Al_2O_3}$ must not be greater than 2.85 or less than 2.00. The three constituents were the essential ones, and the hardening of calcareous hydraulic cements was probably mainly due to the formation from these three compounds of colloidal calcium hydro-silicates. Even at the present time, however, the precise nature of the hardening process was the subject of much speculation and research.

(*b*) The percentage of MgO must not be greater than 3 per cent. Magnesia combined with silica and alumina to form silicates and aluminates which hydrated more slowly than the calcium compounds, and might, therefore, cause disruption after the cement had set, if present in any quantity.

(*c*) The percentage of SO_3 must not be greater than 2.75 per cent. SO_3 appeared in the chemical analysis as the acidic portion of calcium sulphate ($CaO \cdot SO_3 = CaSO_4$) and magnesium sulphate ($MgO \cdot SO_3 = MgSO_4$). Small amounts of added calcium sulphate retarded the setting of the cement, and were beneficial. Should larger amounts be present the relative softness of the calcium sulphate in comparison with the cement created a condition of weakness. Moreover, the presence of calcium sulphate in any appreciable quantity in the raw materials was undesirable owing to the probability of reduction at the high temperature of the kiln, with the consequent production of calcium sulphide, which then decomposed the iron compounds, forming iron sulphide.

(*d*) Specific gravity must be not less than 3.10 per cent.

(*e*) The fineness of the cement must be such that not less than 86 per cent. would pass through a sieve having a mesh of 180 to the linear inch.

(*f*) The tensile strength requirements were :—

(1) For neat cement, with briquettes prepared according to standard method, the breaking stress at 7 days must not be less than 450 lb. per sq. in. At 28 days the average breaking stress must not be less than

$$\text{Breaking stress at 7 days} + \frac{40{,}000 \text{ lb.}}{\text{Breaking stress at 7 days.}}$$

(2) Cement-sand briquettes, prepared exactly as before, must show tensile strengths as follow :—Breaking stress at 7 days must not be less than 200 lb. per sq. in. ; at 28 days, the average breaking stress must not be less than

$$\text{Breaking stress at 7 days} + \frac{10{,}000 \text{ lb.}}{\text{Breaking stress at 7 days.}}$$

(*g*) Crushing strengths of Portland cement were usually about ten times the tensile strength, and were of greater importance than the latter from a practical point of view.

(*h*) The setting time of cement, determined by the Vicat needle, was frequently of great importance. The constancy of volume and soundness tests were most important, and the soundness of Portland cement must be determined by the Le Chatelier method.

Turning to the "hydrate" cements, of which plaster of Paris was a typical example, the lecturer described the preparation of the substance from the mineral gypsum, the chemical formula of which was $CaSO_4 \cdot 2H_2O$. Heating the mineral to between 100 and 200 deg. C. partially dehydrated it, forming plaster of Paris—$CaSO_4 \cdot \frac{1}{2}H_2O$; that substance had the property of recombining with water (forming $CaSO_4 \cdot 2H_2O$) and setting hard in the process. Should the mineral be heated above 200 deg. C. the whole of the water was expelled and anhydrous $CaSO_4$ was left, which had not the property of combining readily with water. The substance was then said to be "dead-burnt," and was useless for plaster of Paris. If, however, such dead-burnt plaster was very finely ground, hydration would take place very slowly, with the production of a hard-finish plaster, employed as a flooring composition.

Plaster of Paris, prepared either in the rotary or in the stationary kiln, had a specific gravity of 2.58. The tensile strength of a neat plaster was between 300–400 lb. per sq. inch, and a briquette composed of one part of plaster to three parts of sand had a tensile strength of 100–200 lb. per sq. inch.

To retard the setting of pure plaster of Paris, glue, sawdust, and blood were sometimes used ; while an accelerator capable of hastening the setting of an impure plaster consisted of sodium chloride (common salt).

Keene's cement consisted of plaster of Paris, dipped in a solution of alum, dried, and recalcined at a higher temperature.

Mack's cement was prepared by the addition of calcined sodium or potassium sulphate to completely dehydrated gypsum.

Parian cement was practically identical with Keene's cement, a solution of borax being used instead of alum.

Martin's cement used a solution of potassium carbonate instead of the solution of alum.

Speaking of "complex" cements, the lecturer described the preparation and properties of Sorel cement. A paste made of lightly-calcined magnesium oxide (obtained from the mineral magnesite, $MgCO_3$) and a concentrated solution of magnesium chloride, had the property of setting hard, due to the formation of a hydrated basic oxide, the formula of which might be written as $MgCl_2 \cdot 5MgO \cdot xH_2O$. The value of the letter x was found to be about 17.

Sorel cement was one of the most powerful cements known ; one part of the cement would satisfactorily hold together eight parts of sand, and a mixture of one part cement and four parts sand had a crushing strength in the region of 8,000 lb. per sq. inch. Many patent flooring compositions contained this cement, together with such additions as sawdust, oil, &c. The cement was capable of taking a fine polish, and was sometimes employed in the production o artificial marble.

"A LAND FOR HEROES."

WE have received the following communication from Mr. Thomas Foster, of Burnley :—

"SIR,—It is difficult to follow Mr. Newbold in his further contribution to *The Builder* for March 18. In my letter of March 11, I was only concerned with stating the truth regarding the question of dilution as it appeared to one who had been concerned in the deliberations of the Resettlement Committee, and in its negotiations with the Government.

"In his last letter, Mr. Newbold continues his criticisms of, and innuendoes against, the operatives. I readily admit they have done things they ought not to have done, and left undone things they ought to have done, and on many occasions I have said so. But they are not alone in sins of omission and of commission ; and we as employers have some leeway to make up in this respect. I fail to see, however, what all this has to do with the question upon which the employers are being balloted.

"Seeing that Mr. Newbold may now be presumed to be the Press mouthpiece of the Employers' Federation, it is just possible he will answer two questions which are agitating many minds in the industry, and not all of them operatives' minds :—

"(1) The ostensible purpose of the ballot is to ascertain the opinion of members on two points :—(*a*) Whether they approve the admission of 50,000 discharged soldiers ; and (*b*) whether they will back up the A.C. of the Federation in insisting on this admission, to the point of a lock-out if necessary. Are there any further issues tacitly involved, *e.g.*, enforcement of payment by results, bonus on output, or the necessity for teaching the workman his place ? Some of Mr. Newbold's remarks seem to indicate this, and certain after-dinner speeches reported in both England and Scotland would seem to bear it out.

"(2) Mr. Newbold is extremely anxious to show how patriotic the employers are in assisting the Government to find work for these unfortunate men. The Government gave other pledges while the war was on, one being that this country should be made a 'land fit for heroes to live in.' If that meant anything, it was that these 'heroes' should have a better time than they had before the war, that the conditions of life and work should be made satisfactory. Fully half the building trade employees were among the 'heroes.' Seeing that the employers have refused to entertain various proposals that have been put forward very definitely to improve the position of the building trade 'heroes,' what alternative proposals have they for helping to discharge our obligation to those who went to fight for us who stayed at home ?

"Mr. Newbold can render valuable service if he will answer these questions clearly."

m

er
el
ed
al
on
of
ed
ht
ue

ul
ld
d,
rts
of
ng
er
he
nd
o

ni-
ld
der
as
ing
one
ns
its

his
ra-
ngs
one
any
one
we
in
all
the

pre-
the
he
ing
of

t is
two
ad-
(*b*)
the
to
ere
ro-
put,
his
em
hes
uld

s to
ist-
ese
her
hat
for
ing,
tter
the
ade
ade
ing
ain
ard
the
ive
rge
for

e if

THE MEASURE OF OUTPUT IN BUILDING.

THE following is an abstract of a paper read by Mr. T. Sumner Smith, M.Q.S.A., F.I.A., at a public meeting organised by the Institute of Industrial Administration, and held at the Central Hall, Westminster, on Tuesday last. The chair was occupied by Mr. A. Alban Scott.

The acceleration of output is, if not the chief, one of the greatest concerns of the industrial world to-day. All effort in the past has been mainly in the direction of perfecting machinery and processes, but it has come to be realised that the human element is, after all, an important factor. In no branch of industry does the human factor play any greater part than in building.

Wages Systems.

Linked up with the question of production is the important one of payment. Expert skill, no matter in whatever sphere of work, should have its own special reward as an inducement for the skilful man to remain at his own particular branch of work. The present system of wages in the building industry, irrespective of the question of what is or is not an adequate wage, leads to two evils: (1) A dead level of uniformity of achievement, and (2) A desire on the part of the ambitious to change to a more lucrative and probably less suitable employment. In the engineering trade there are several systems of pay in operation, viz.:—

(1) Flat-rate or day-wage system.
(2) Contract system.
(3) Piecework system.
(4) Premium bonus system.
(5) Collective bonus system.

The flat-rate or day-wage system is one which represents a return for time rather than performance. Its principal advantage to the employer is simplicity in estimating and recording, and to the employee an assured wage freed to a limited extent of individual responsibility; whilst its defects to the worker are that it does not recompense him for increased exertion or higher intelligence.

The contract system is one of letting out work to an individual, or to a squad of men. This system has fallen into disuse on account of its many abuses.

The piecework system offers a direct inducement to the worker to increase production. The employer usually fixes the price for the work. The price allowed for the job is usually determined by comparison with the time previously taken for that or similar work, or sometimes by the more modern analytical method; the workman, generally, has no say in the matter, since he is assured of payment for the time spent at his ordinary day-rate. Any time saved on his ordinary time is to his advantage, but should he exceed this time the additional time is deducted from the surplus or balance of subsequent work before he receives payment in excess of his day-rate. In some instances the time to do a job is fixed on the basis of the piecework rate of speed, and time and one-third is paid, that is to say, 1⅓ rate of pay is paid for the time worked. It is obvious that under this system the output will be limited, because there is no inducement to perform the job in less than the time allowed, since quicker work will not be recompensed. It has many other drawbacks besides those of a restricted maximum wage and a limitation of output; its only benefit is that it establishes a relation between work and wages.

Premium bonus system is a modification of the piecework plan, insomuch as the worker is assured of his wages at his day-rate for time spent on the job should he exceed the time allowed. Also, under this system the job is given a price or time which is determined in the same way as for the piecework plan, but the employer shares in the benefit from the time saved and there is no restriction of wage or output. Again, the time allowance in this system is not altered unless some material change of conditions (such as the introduction of improved machinery) occurs, or a flagrant mistake has been made in fixing the rate.

In comparison with the day-work system the premium bonus system has the advantage of securing greater production by the exercise of the workman's skill stimulated by self-interest instead of by more exacting and, as sometimes happens, irritating supervision. The two premium bonus systems mainly in use in this country are the "Halsey-Weir" and the "Rowan."

The "Halsey-Weir" system is a direct proportional method—50 per cent. of the time saved is paid as a premium to the workman; whilst the "Rowan" system is a differential method—a premium is paid to the workman for the time spent on the job in the proportion of the time saved to the time allowed; that is to say, were he to save 50 per cent. of the time allowed his ordinary day-rate wages for the time spent on the job would be increased by that percentage.

Although these two methods may appear similar, when compared it will be found there is a considerable difference.

As an example, if the time allowed to do a job is 10 hours, and the time taken on the job is 8 hours, the time saved is 2 hours. By the "Halsey-Weir" system the premium is equal to 1 hour's pay, and by the "Rowan" system 1.6 hour's pay; the total wage by the former is equal to 9 hours' pay, and by the latter 9.6 hours' pay for 8 hours' work; the percentage increase in wage to the workman on the basis of day-work rate is 12½ per cent. by the "Halsey-Weir" system, and 20 per cent. by the "Rowan" system for time worked. There are corresponding gains to the employer, since the workman does not receive the benefit of the whole of the time he saves. It is a moot point as to whether the employer gains in the long run by taking advantage of the workers in this way; it certainly is a bone of contention, and breeds discontent and dissatisfaction on the part of the workers.

When a job is done in 6 hours under the piecework, "Halsey-Weir," and "Rowan" systems, to give earnings equal to time-and-one-third, by the piecework system the time allowed the workman to do a job is equal to 8 hours' work at day-work rate, by the "Rowan" differential premium system equal to 9 hours' work, by the "Halsey-Weir" proportional system equal to 10 hours' work. On the common basis of time-and-a-third the piecework system is the least favourable to him. On the other hand, should the workman complete the job in such time as would give him greater earnings than time-and-a-third the piecework system is the most favourable to him. It is largely on account of taking advantage of the workers, and rate-fixing which seeks to limit earnings to day-rate pay plus one-third, that these systems have not given general satisfaction, and have not met with unqualified success.

As regards the collective bonus system, the "Priestman" system is the best known. This provides that each worker shall receive a percentage increase on his weekly wage, which is proportionate to the week's increase in production. That is to say, if the output for a particular week has been increased 25 per cent. above the normal figure, each worker in the establishment receives 25 per cent. increase in his week's wage. It is said that this automatically makes for combined effort to make production the maximum. It is claimed that there are no petty jealousies, and work is not regulated by the slowest worker, but every worker endeavours to help the others. It is further stated that the actual result of two years' work on this system has been an average increase in production of 40 per cent., which means the workers have been paid 40 per cent. more in wages than they would have received under the old system of day-rate. But it is feasible to imagine many drawbacks in this system. In works that have bad management and organisation, and out-of-date plant, output would be seriously restricted, and consequently would swallow up part of the men's efforts.

It is doubtful whether any one of these systems is applicable to the building trade, because many difficulties may arise out of the nature of the work. However, some system of payment by result is certainly desirable and necessary as a special reward for skill in the accelerating of output. A scheme which would probably meet the case is as follows: Groups of workmen, including the foreman, should receive by way of bonus 50 per cent. of the value of the increased output, the employer to take 15 per cent., and the remaining 35 per cent. should be set aside and a fund created termed a "bonus fund." A proportion of this bonus fund, say, 75 per cent., might be distributed annually and divided amongst all employees in proportion in accordance with their respective wages, and the remaining 25 per cent. distributed amongst those employees who had shown special aptitude and put in regular attendance at their work. This method takes into consideration reward for a group of workmen engaged upon a special task, and reward for individual merit, whilst in addition they would participate in the collective reward, and it benefits the employer to a certain extent. Before this scheme could be put into operation it would involve the setting up of constants of labour for rate-fixing purposes, which should be upon a broad and equitable basis.

Conditions of Employment.

If the human being is regarded as a machine in production, the fact must not be lost sight of that he is a complex and complicated machine. To get out of him his best requires the best workshop conditions to facilitate the execution of the work and to safeguard his health. Another factor is the selection of workmen—the right man for the right job. The engagement of workers in the building industry in the past, and even to-day, as well as in other industries, has been mainly by a rule-of-thumb system. Due regard has not been given to the proper selection of workers as to their fitness—physical and mental—for the task they have to perform.

Accidents and Fatigue.

It has been proved beyond all doubt that it is highly dangerous to maintain a very high rate of speed for any considerable length of time, nor is it policy to go beyond the safe limits of speed, as they invariably lead to accidents. Excessive hours of continuous labour also contribute to accidents. A reduction in working hours per day may lead to an increase in speed and greater output. It is logical to conclude that too high a speed of working is of but little value, insomuch as it is likely to lead to accidents and the early setting in of fatigue.

Time and Motion Studies.

Data derived from time and motion studies, when applied intelligently and scientifically, should lead to an increase in the efficiency of human labour, with a corresponding increase in output and without undue fatigue.

Mr. Frank B. Gilbreth, in his book "Bricklaying System," shows that by the adoption of suitable scaffolding he has succeeded in reducing the number of movements necessary for laying a brick from 18 to 5, and increased the rate of bricks laid per day to three times the usual number; now between 3,000 and 4,000 per day. In America the bricks are slightly less in size than ours. In England and Wales we have various sizes, all of which are less than those of Scotland. What is required is a standard size or sizes easy to handle and adaptable for quick laying. Given these, with suitable scaffolding and good organisation, the average bricklayer, intelligently trained, should be able to lay an average of from 1,500 to 2,000 bricks per day on straight walling, without undue fatigue.

(To be continued.)

PATENTS.

APPLICATIONS PUBLISHED.*

155,125.—R. K. Dawson: Revolving chairs

155,127.—J. Ryan: Means and a method of securing building blocks in position.

155,326.—M. E. Gerard and L. G. Mouchel & Partners: Reinforced concrete structures.

155,350.—A. H. Hawes: Hinges for doors, windows, &c.

155,366.—S. A. Griffiths and H. G. Robbins: Tiles.

155,381.—G. Mills: Draught excluders for doors.

155,385.—W. E. Clifton and J. S. Ewart: Construction of concrete floors and roofs.

155,398.—E. Schou and Emulsion Aktieselskabet: Manufacture of painting, priming and compositions.

155,431.—H. D. Baylor: Slow setting fat and waterproof cement, and method of producing same.

155,447.—T. P. Eustege: Fastener and retainer for casement windows, doors, &c.

155,454.—F. Malgarini: Manufacture of reinforced hollow blocks for masonry work.

155,462.—E. Hurden, A. P. Hurden and S. E. Beeson: Construction and erection of roofs and ceilings.

155,470.—E. Hurden, A. P. Hurden and S. E. Beeson: Devices for reinforcing timber beams.

155,485.—A. J. Wells: Heating of buildings.

142,450.—H. G. Tregillus: Girders.

155,599.—C. Rabut: Method of and means for clamping or joining together the constructional elements of walls or other like structures.

155,619.—J. Clement: Sash windows.

155,628.—W. Fairweather (Singer Manufacturing Co.): Hinges.

155,629.—M. Kovacs: Sliding windows, doors, partitions, and the like structures.

155,630.—E. G. Trobridge: Buildings, and floors, walls, doors, and the like therefor.

155,635.—K. Wurzner: Devices for colouring, painting, impregnating, or smearing paper or like breadths of material.

155,657.—W. Smith: Brick-cutting machines.

155,682.—G. R. Speaker: Building frames.

155,704.—F. Hesketh: Kitchen or other like fire-ranges used for domestic or cooking purposes.

155,857.—R. Thomson: Dwellings.

155,893.—H. C. Bennett and Redpath, Brown & Co., Ltd.: Cleats or securing devices for roof structures.

155,932.—S. J. Williams and J. H. Webster: Automatic window-fastener.

156,006.—H. G. Jennison: Wood block pavements.

156,015.—G. Morandi: Manufacture of chairs and other articles of furniture from plywood.

156,016.—E. Showell & Sons, Ltd., and A. E. Johnson: Flush drop handles for drawers and the like.

156,023.—E. C. Dittmar: Method and apparatus for coating and finishing flooring.

156,035.—H. F. Gray: Apparatus for cleaning walls and ceilings.

2,295–15.—Geofroy: Hollow bricks.

156,361.—P. C. Taylor: Pivoted sliding windows.

56,385.—W. Turner: Construction of concrete sewers and conduits.

156,430.—A. Norman and H. G. Parker: Extensible tables.

156,442.—H. J. C. Forrester (Internationalt Isolations Kompani Aktieselskabet-Ikas): Manufacture of porous stones for thermal insulating purposes.

156,815.—G. Hervieu and P. M. G. Marechal: Sheds for airships, aeroplanes, &c.

156,819.—G. H. Forrester, G. Marsh and J. D. Marsh: Method of building concrete structures and apparatus therefor.

156,820.—H. Atkins and J. A. Colquhoun: Manufacture of bricks, clinker, road metal, sand, &c.

156,827.—J. A. Lillie: Poison compositions for use as anti-fouling paints and for other purposes.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the building trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Bricklayers' Labourers.	Plasterers'
Aberdare	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Accrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Altrincham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Ashton-under-Lyne	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Barnsley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Barrow-in-Furness	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Barry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bath	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bedford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Birkenhead	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Birmingham	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/1	
Bishop Auckland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Blackburn	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Blackpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bolton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Bournemouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bradford	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Bridgwater	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/10½	1/7½	
Brighton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Bristol	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Burnley	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Burton-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Bury	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Cambridge	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cardiff	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Chatham	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Chelmsford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Cheltenham	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Chester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Chesterfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Colchester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Coventry	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Crewe	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/10½–1/11	
Darlington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Derby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Doncaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Dudley	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Durham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
East Glam. and Mon. Valleys	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Exeter	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9
Folkestone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Gloucester	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9
Grantham	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Grays	2/4	2/4	2/4	2/4	2/4	2/4½	2/3	2/1	
Grimsby	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Great Yarmouth	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Guildford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Halifax	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Harrogate	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hartlepools	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hastings	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Hereford	2/–	2/–	2/–	2/–	2/–	2/–	1/11	1/9	
Huddersfield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Hull	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Ipswich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Lancaster	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Leamington Spa	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Leeds	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Leicester	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Lichfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Lincoln	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Liverpool	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0½	
Llanelly	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
London	2/4	2/4	2/4	2/4	—	2/4½	2/3	2/1	
Loughborough	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	1/9	
Luton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8	
Maidstone	1/11	1/11	1/11	1/11	1/11	1/11	1/11	2/0–2/0½	
Manchester	2/4	2/4	2/4	2/4	2/4	2/4	2/4	1/11½	
Mansfield	2/2½	2/2½	2/2½	2/2½	2/2½	2/3	2/2½	2/1	
Merthyr Tydfil	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Middlesbrough	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newcastle-on-Tyne	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Newport, Mon.	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Northampton	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Norwich	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Nottingham	2/4	2/4	2/4	2/4	2/4	2/4½	2/4	2/1	
Oakham	2/1	2/1	2/–	2/1	2/1	2/1	2/1	1/10	
Oldham	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Oxford	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Plymouth	2/1	2/1	2/1	2/1	2/1	2/1	2/–	1/10	
Pontypridd	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Portsmouth	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Preston	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Reading	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Rochdale	2/4	2/4	2/4	2/4	2/4	2/5	2/4	2/0–2/0½	
Rochester	1/11	1/11	1/11	1/11	1/11	1/11	1/11	1/8	
Rugby	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
St. Albans	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/8	
St. Helen's	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Scarborough	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Sheffield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Shrewsbury	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Southampton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Southend-on-Sea	2/0½	2/0½	2/0½	2/0½	2/0½	2/0½	1/11½	1/9	
Southport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
South Shields	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stockport	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Stockton-on-Tees	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Stoke-on-Trent	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
Stroud	2/–	2/–	2/–	2/–	2/–	2/–	1/11½	1/9	
Sunderland	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Swansea	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Taunton	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Torquay	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wakefield	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Walsall	2/2½	2/2½	2/2½	2/2½	2/2½	2/3½	2/2½	1/11½	
Warrington	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
West Bromwich	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Wigan	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/0–2/0½	
Windsor	2/–	2/–	2/–	2/–	2/–	2/–	2/–	1/9	
Wolverhampton	2/4	2/4	2/4	2/4	2/4	2/4	2/4	2/1	
Worcester	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	
York	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	2/2½	1/11½	

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv; Competitions iv; Public Appointments lxxvi; Sales by Auction lxxx Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING AND PAINTING.

MARCH 25.—**Bognor.**—HOUSES.—Erection of 28 houses, for the U.D.C. Mr. O. A. Bridges, Architect, Council Offices, Bognor. Deposit £2 2s.

MARCH 25. — **Dundee.** — GLAZING. — Execution of patent glazing required at extensions to docks sub-station. Drawing Office, Carolina Port, Generating Station, Dundee.

MARCH 25. — **Dundee.** — SLATING. — Execution of slating work required at extensions to docks sub-station. Drawing Office. Carolina Port Generating Station, Dundee.

MARCH 26. — **Bournemouth.**—PAINTING.—Painting the exterior wood and ironwork of the Municipal College and Public Library, Lansdowne. Mr. F. P. Dolamore, Borough Engineer, Bournemouth.

MARCH 26.—**Chilton.**—EXTENSIONS.—For extensions to Chilton and Windlestone Workingmen's Club, Mr. S. W. Nixon, Secretary, The Club, Chilton.

MARCH 26.—**Hallow.**—COTTAGES.—Erection of a pair of cottages at Hallow, near Worcester, for the County Council. County Architect, 38, Foregate-street, Worcester. Names by March 19.

MARCH 26.—**Kingswood.**—HOUSES.—Erection of 24 houses, for the U.D.C. Surveyor, Council Offices, Kingswood. Deposit £2 2s.

MARCH 26.—**North Walsham.**—HOUSES.—Erection of four pairs of dwelling-houses, for the U.D.C. Mr. B. P. Gaymer, architect, Birchwood, North Walsham. Deposit £1.

MARCH 26.—**Saffron Walden.**—PAINTING.—Painting (1) the new Almshouses; (2) 11 cottages in Gold-street, for the Trustees of King Edward Almshouses. Mr. C. Stewart D. Wade, Clerk, 18, Hill-street, Saffron Walden.

MARCH 28.—**Innerleithen.**—HOUSES.—For erection of 30 houses in 13 blocks on Pirn site, for the T.C. Messrs. Dick Peddie & Walker Todd, architects, 8, Albyn-place, Edinburgh.

MARCH 28.—**Langley Mill.**—ADDITIONS.—Alterations and additions to a house at Dunstead, Langley Mill, for Mrs. Lova t. Messrs. Paines, Booth & Richardson, Albion Chambers, Nottingham. Deposit £1 1s.

MARCH 28.—**Manchester.**—SHOP PREMISES, &C.—Erection of new shop premises and public hall in Platt-lane, Rusholme, for the Manchester and Salford Co-operative Society, Ltd. Architect's Department, Co-operative Wholesale Society, Ltd., 1, Balloon-street, Manchester. Deposit £1 1s.

MARCH 28.—**Northallerton.**—SALE RING.—Erection of Sale Ring, concreting of yard, &c., for the Directors of John Todd's Northallerton Store Stock Mart Co. Mr. R. Robinson, Secretary, Applegarth Mart, Northallerton.

MARCH 28.—**Prestonpans.**—HOUSES.—Erection of 36 houses (three- and four-apartment cottages), for the T.C. Messrs. R. & A. K. Smith, surveyors, 44, Queen-street, Edinburgh.

MARCH 28.—**Skelmanthorpe.**—HOUSES.—Erection of 15 houses, for the U.D.C. Messrs. J. Berry & Sons, architects, 3, Market-place, Huddersfield.

MARCH 29.—**Glasgow.**—STEEL WINDOWS.—Supply of and erection of steel windows in connection with the extension of the Municipal Buildings. Mr. J. Lindsay, Town Clerk, City Chambers, Glasgow. Deposit £5.

MARCH 29.—**Gleneig.**—HOUSE.—Erection of a doctor's house at Mallaig, for the Parish Council of Gleneig. Mr. J. G. Falconer, architect, Fort-William.

MARCH 29.—**Ryde.**— HOUSES.—Erection of 30 houses on Swanmore site, for the T.C. Borough Surveyor, Town Hall, Ryde, I.W. Deposit, £2 2s.

MARCH 29.—**Whittingham.**—PAINTING.—For painting at the County Asylum, Whittingham, near Preston. Mr. H. E. Morgan, Clerk and Steward, Whittingham.

MARCH 30.—**Ampthill.**—PAINTING.—Painting at the Isolation Hospital, Steppingley, for the R.D.C. Mr. Leonard Foster, surveyor, Station-square, Flitwick.

MARCH 30.—**Gellygaer.**—HOUSES. &C.—(1) Roads and sewers for 150 houses; (2) Erection and completion of 150 houses, for the U.D.C. Mr. P. Jones-Williams, Architect, Council Offices, Hengoed. Deposit £2 2s.

MARCH 30.—**Glendale.**—HOUSES, &C.—For erection of 30 houses and construction of roads, &c., at Wooler, and erection of six houses and road construction at Lowich, for the R.D.C. Messrs. G. Reavell & W. A. Tebbs, architects, Lloyds Bank Chambers, Alnwick.

MARCH 30.—**London.**—OVEN.—Installation of a brick built baker's oven at the Grove Fever Hospital, Tooting Graveney, S.W. 17, for the Metropolitan Asylums Board. Office of the Board, Embankment, E.C. 4. Deposit £1.

MARCH 30.—**Long Ashton.**—HOUSES.—Erection of 12 houses at Bishopsworth, 10 at Nailsea, 8 at Winford, 9 at Winford (Felton), 10 at Yatton (Claverham), and 6 at Yatton (Biddie-street), for the R.D.C. Mr. Maynard Froud, architect, St. Stephen's Chambers, Baldwin-street, Bristol. Deposit £1 1s.

MARCH 30.—**Portsmouth.**—MEMORIAL.—Erection of memorial, for the Portsmouth War Memorial Committee. Messrs. J. S. Gibson & Gordon, architects, 5, Old Bond-street, London, W. Deposit, £2 2s.

MARCH 30.—**Rampside.**—RE-ROOFING, &C.—For enlarging and re-roofing St. Michael's Church. Mr. H. T. Fowler, architect, 6, Cornwallis-street, Barrow.

MARCH 30.—**Speymouth.**—ADDITIONS.—For adding wing to house at Upper Auchenreath and for covered court at Bands. Mr. D. J. Cunningham, Estate Offices, Fochabers.

MARCH 30. — **Wokingham.** — ALTERATIONS. — For alterations, &c., in conversion of a house into two flats at Pinewood, near Wokingham, for the Metropolitan Asylums Board. Mr. Duncombe Mann, Clerk to the Board, Embankment, E.C.4. Deposit £1.

MARCH 30.—**Woolwich.**—REPAIRS, &C.—Repair and re-decoration at the Medical Superintendent's house at the Infirmary, for the Board of Guardians. Steward's Office, The Infirmary.

✱MARCH 31.— **Bromley.**— ENLARGEMENT.—For enlargement in semi-permanent materials, at the County School for Girls, Bromley, for the Kent Education Committee. Mr. W. H. Robinson, F.S.Arc.. Sessions House, Maidstone, Kent. Deposit £2

MARCH 31.—**Buckfastleigh.**—HOUSES.—Erection of 17 houses on Glover's Park, Buckfastleigh, for the U.D.C. Mr W. Arthur Vercoe, architect, Sun Buildings, Plymouth. Deposit £2 2s.

MARCH 31.—**Congleton.**—COTTAGES.—Erection of (1) twelve cottages at Betchton and (2) eight at Hassell. Messrs. A. Price & Son, architects, Sandbach. Deposit, £2 2s.

MARCH 31.—**Connah's Quay.**—ROAD CONSTRUCTION, HOUSES.—Erection of 156 houses and construction of roads and sewer work as whole, or: (1) Streets and sewer work, 938 acres; (2) one section 34 houses; (3) one section 64 houses; (4) one section 58 houses, for Connah's Quay U.D.C. Mr. F. A. Roberts, M.S.A., architect, Mold. Deposit £3 3s.

MARCH 31.—**Leicester.**—HOUSES.—For erection of 60 houses (ten contracts), for the T.C. Mr. E. G. Mawbey, City Surveyor, Town Hall, Leicester. Deposit, £1 1s.

MARCH 31.—**Llantrisant.**— REPAIRS.— Repairs to houses in the parishes of Llantrisant, Tonyrefail, Edmondstown, near Ponygraig, Gilfach Goch, and Penygawsi, Llantrisant. Mr. Thomas Saunders, Surveyor, Council Offices, Pontyclun.

MARCH 31.—**Radcliffe.**—STONE WORK.—For stone work and fencing to enclose site of war monument. Mr. W. J. Rothwell, Surveyor, Council Office, Radcliffe. Deposit, £1 1s.

MARCH 31.—**Stoke-on-Trent.**—PAINTING.—For painting at the following places, viz.:—Tunstall, Cemetery and Park; Burslem, Baths; Hanley, Etruria Park, Baths, and Town Hall; Stoke, Hartshill Cemetery, Baths, Market, Library, and St. Peter's Chambers; Fenton, Town Hall and Library; Longton, Park, Cemetery and Market. Borough Surveyor, Town Hall, Stoke-on-Trent.

MARCH 31.—**Wakefield.**—PAINTING.—External painting of the County Hall, Wakefield, for the West Riding C.C. West Riding Architect, County Hall, Wakefield.

APRIL 1.—**Manor Park.**—SCHOOL.—Erection of school buildings to accommodate 600 children at Dersingham-avenue, for the County Borough of East Ham Education Committee. The Borough Engineer, Town Hall, East Ham. Deposit, £3.

APRIL 2.—**Birmingham.**—PAINTING.—Exterior cleaning, colouring and painting of certain portions of the Erdington House, Birmingham. Mr. E. F. Evans, Master of the Institution Birmingham. Deposit £1 1s.

APRIL 2.—**Beverley.**—HOUSES AND FARM BUILDINGS.—Erection of four houses and farm buildings at Manor Farm, Preston, for the East Riding County Council. Mr. J. Bickersteth, Clerk, County Hall, Beverley.

APRIL 2.—**Dines Cross.**—VESTRY.—Erection of vestry, for the Tabor Baptist Church. Mr. J. T. J. Williams, architect, 10, Pendre, Cardigan.

APRIL 2.—**Loanhead.**—HOUSES.—Erection of 26 houses (three- and four-apartments), for the T.C. Mr. John Brotchie, surveyor, 29, Hanover-street, Edinburgh.

APRIL 4.—**Chingford.**—HOUSES.—Erection of 30 houses on Little Bull Field Estate, King's-road, and 24 houses on Butcher's Field, King's-road, for the Chingford U.D.C. Messrs. Gunton & Gunton, architects, Finsbury House, Blomfield-street, E.C.2.

APRIL 4.—**Eastbury, Berks.**—HOUSES.—Erection of 10 houses at Eastbury and 10 houses at East Garston, Berks., for Hungerford R.D.C. Mr. H. W. Smith, M.S.A., 57, High-street, Oxford. Deposit, £1 1s.

APRIL 4.—**Faversham.**—HOUSES.—Erection of eight houses at Preston-avenue, for the T.C. Mr. S. P. Andrews, Borough Surveyor, 20, West-street, Faversham.

APRIL 5.—**Rugby.**—Erection of houses at Rugby, for the Commissioners of H.M.O.W. Borough Surveyor, Rugby, and H.M.O.W., Storey's-gate, Westminster, S.W.1. Deposit £1

APRIL 6.—**Bedford.**—PAINTING.—Painting of the lamp-posts, section pillars, &c., in the borough. Borough Electrical Engineer, Cauldwell-road, Bedford.

APRIL 6.— **Evesham.**— HOUSES.— Erection of 68 houses with their appurtenances on the Council's site near King's-road, Bengeworth, Evesham, for the Borough of Evesham. Mr. Harold E. Dicks, M.S.A., Architect to the Council, Evesham. Deposit £2 2s.

APRIL 6.—**Stalybridge.**—EXTENSION.—Extension of main car shed, Stalybridge, for the Stalybridge, Hyde, Mossley & Dukinfield Tramways & Electricity Board. Messrs. W. H. George & Son, architects, 7, Warrington-street, Ashton-under-Lyne. Deposit £2 2s.

APRIL 6.—**Wallingford.**—COTTAGES.—Erection of four brick cottages each at Long Wittenham and Brightwell, Berks, for the R.D.C. Messrs. Drower & Brighton, quantity surveyors, 28, Victoria-street, Westminster, London, S.W.1.

APRIL 7.—**Frimley Green.**—ADDITIONS.—Erection of additional buildings at Barrow Hill Sanatorium, Frimley Green, Surrey, for H.M. Office of Works. Director of Contracts, H.M. Office of Works, London, S.W. 1. Deposit £1 1s.

✱APRIL 8.—**Huddersfield.**—ALTERATIONS.—Alterations at Huddersfield Post Office for the Commissioners of H.M. Works. Director of Contracts, H.M. Office of Works, London, S.W.1. Deposit £1 1s.

APRIL 9.—**Sandwich.**—HOUSES.—Erection of 50 houses, for the T.C. Mr. E. W. May, architect, 51, New-street, Sandwich. Deposit £3 3s.

APRIL 10.—**Edinburgh.**—HOUSES.—Erection of tenement houses at Willowbrae-road (Abercorn area), for the T.C. Mr. J. D. Gibson, surveyor, 60, Frederick-street, Edinburgh.

✱APRIL 11.—**Newcastle-on-Tyne.**—HOUSES.—Erection of about 540 houses and for the making of the estate roads and the laying of drains, for the T.C. Mr. James T. Cackett, architect, Pilgrim House, Newcastle-upon-Tyne.

✱APRIL 15. — **Southampton.**—ALTERATIONS.—For alterations at the Telephone Exchange, Southampton, for the Commissioners of H.M. Works. Director of Contracts, H.M. Office of Works, London, S.W. 1.

✱APRIL 15.—**Wrexham.**—REPAIRS AND MATERIAL. —Triennial Contract, from May 1, 1921, at Wrexham, in the Oswestry Division of the Welsh Area, Royal Engineer District, 3, Belmont, Shrewsbury. Engineer Officer, Commanding Royal Engineer, Royal Engineer Office, 3, Belmont, Shrewsbury.

APRIL 16.—**Sheffield.**—REFUSE DISPOSAL WORKS.—Erection and supply of buildings and plant for new refuse disposal works, for the T.C. Messrs. Mortimore, Lyon & Co., engineers, 48, Mansfield Chambers, St. Ann's-square, Manchester. Deposit, £5 5s.

APRIL 15.—**Hessle.**—HOUSES, &C.—Construction of street and sewerage works in connection with the laying out, for housing purposes, of about 7 acres of land: (*b*) erection of 80 houses on the said land; (*c*) erection of two houses at the corner of Barrow-lane and Swanland-road, Hessle, for the U.D.C. Mr. J. M. Dossor, F.R.I.B.A., Waterloo Chambers, Hull. Deposit £2.

✱APRIL 18.—**Bromley District.**—HOUSES, &C.—Road making and construction of sewers in connection with four sites, and the erection of the following houses, in pairs, with footpaths, fencing, &c: Chelsfield, 50; Farnborough, 16; Hayes, 10; Keston, 32; Knockholt, 12; Orpington, 130; St. Mary Cray, 50; West Wickham, 12, for Bromley R.D.C. Mr. F. Danby Smith, F.R.I.B.A., Parliament Mansions, Victoria-street, S.W. 1.

JUNE 30.—**Pulborough.**—COTTAGES.—Erection of 30 cottages in various parishes, for the R.D.C. Mr. Percy Ayling, Clerk to the Council, Council Offices, Storrington, Pulborough.

NO DATE.—**Bradford.**— CONVERSION.—Conversion into offices of warehouse premises, Upper Piccadilly, Bradford, for Messrs. F. Willey & Co., Ltd. Messrs. Moore & Crabtree, architects, Queensgate Chambers, Bradford.

NO DATE.—**Edinburgh.**—HOUSE.—Erection of six-roomed house at Tarbrax. Mr. R. Fairlie, architect, 14, Randolph-place, Edinburgh.

NO DATE.—**Haddington.**—HOUSES.—Erection of (*a*) 8 houses at Roodlands, Haddington, and (*b*) 10 houses at Longniddry, for the C.C. Messrs. Greig & Fairbairn, architects, 31, York-place, Edinburgh, and Messrs. Dick Peddie & Walker Todd, architects, 8, Albyn-place, Edinburgh.

NO DATE.—**Ipswich.**—EXTENSION.—Extension of packing department of Messrs. Ransomes & Rapier, Ltd., Waterside Works, Ipswich. Messrs. Ransomes & Rapier, Ipswich.

NO DATE.—**Keynsham.**—HOUSES.—Erection of working class dwellings at Keynsham Parish, for the R.D.C. Mr. John Bevan, architect, 36, Corn-street, Bristol.

NO DATE.—**West Riding of Yorkshire.**—REPAIRS, &C. —Repairs and renovations to Court Houses, Police-stations, and Lock-ups, &c., throughout the Administrative County of the West Riding of Yorkshire. Mr. Percy O. Platts, County Architect, Wakefield.

FURNITURE, MATERIALS, etc.

MARCH 25.—**Chorley.**—PIPES.—Supply of 108 3 in. cast-iron coated pipes, 9 ft. long, &c., to the R.D.C. Mr. R. E. Aspden, Clerk, Council Offices, High-street, Chorley, Lancs

MARCH 26.—**Finchley.**—MATERIALS.—Supply of various materials to the U.D.C. Mr E. H. Lister, Clerk, Council Offices, Church End, Finchley, N.3.

MARCH 26.—**Waterloo-with-Seaforth.**—MATERIALS. —Supply of road and other materials to the U.D.C. Mr. F. Spencer, Surveyor, Town Hall, Waterloo.

MARCH 28.—**Caerphilly.**—MATERIALS.—Supply of granite, limestone, metalling and tar, to the U.D.C. T. H. Richards, Surveyor, Caerphilly.

MARCH 28.—**Normanton.**—MATERIALS.—Supply of road materials, to the U.D.C. Surveyor, Council Offices, Normanton.

MARCH 29.—**Great Crosby.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. J. A. Wright, Surveyor, Council Offices, Coronation-road, Great Crosby.

MARCH 30. — **Cannock.** — MATERIALS. — Supply of various materials, to the U.D.C. Mr. Robt. Blanchard, Surveyor, Council Offices, Cannock.

MARCH 30.—**Elham.**—FLINTS.—Supply of flints, to the R.D.C. Mr. A. E. Price, surveyor, Lyminge.

MARCH 30.—**London.**—BUILDERS' IRONMONGERY.—Supply to H.M. Commissioners of Works, of builders' ironmongery. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W.1.

MARCH 30.—**London, S.W.**—STEEL LOCKERS.—Supply steel clothing lockers to Western Fever Hospital, Seagrave-road, Fulham, S.W.6, for Metropolitan Asylums Board. Mr. Duncombe Mann, Clerk to the Board, Embankment, E.C.4. Deposit £1.

MARCH 31.—**Braintree.**—GRANITE.—Supply of 1,000 tons of 2 in. granite, to the U.D.C. Mr. H. H. Nankivell, surveyor, Braintree.

MARCH 31.—**Dunfermline.**—MATERIALS.—Supply of broken stone setts, pitch, tar, &c., to the T.C. Mr. R. Muir Morton, Burgh Engineer, City Chambers, Dunfermline.

MARCH 31.—**Romford.**—ROAD MATERIALS.—Supply of 1,000 tons of 2 in. broken blue Guernsey granite and 150 tons of tarred slag macadam. Mr. F. G. Beaumont, surveyor, Romford.

MARCH 31.—**Woodford.**—MATERIALS.—Supply of road materials, to the U.D.C. Mr. W. Farrington, Surveyor, Council Offices, Woodford Green.

APRIL 2.—**Marple.**—MATERIALS.—Supply of road and other materials, to the U.D.C. Mr. D. J. Diver, Surveyor, Council Offices, Marple.

APRIL 2.—**Teddington.**—MATERIALS.—Supply of road and other materials to the U.D.C. Mr. M. Hainsworth, surveyor, Teddington.

APRIL 4.—**Belfast.**—STORES.—Supply of materials, to the Electricity Dept. of the T.C. Mr. T. W. Bloxham, City Electrical Engineer, Belfast. Deposit, 10s.

APRIL 4.—**Hertford.**—MATERIALS.—Supply of materials to the T.C. Borough Surveyor, The Castle, Hertford.

APRIL 4.—**Yiewsley.**—JOINERY.—For supply of joinery for housing scheme. The Director of Contracts, H.M. Office of Works, London, S.W.1.

APRIL 6.—**London.**—OILS.—Supply of various oils, &c., to H.M. Commissioners of Works. Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W.1.

APRIL 11.—**Tenterden.**—MATERIALS.—Supply of road materials to the R.D.C. Mr. W. L. Turner, District Surveyor, Tenterden.

APRIL 18.—**Tenterden.**—MATERIALS.—Supply of road materials to the T.C. Mr. W. L. Turner, Borough Surveyor, Tenterden.

ENGINEERING, IRON AND STEEL

MARCH 26.—**Torquay.**—WIRING.—Wiring of houses on the West Hill Estate for the T.C. Borough Electrical Engineer, Town Hall, Torquay.

MARCH 29.—**Beverley.**—DREDGING.—Dredging of the Beverley Beck and the cleaning out of the Mill Scut, for the T.C. Mr. J. Gould Smith, Borough Surveyor, 31, Lairgate, Beverley.

MARCH 29.—**Wimbledon.**—MATERIALS.—Supply of meters, jointing materials, transformers, lubricating oils, &c., to the Electricity Dept. Borough Electrical Engineer, Durnsford-road, Wimbledon.

MARCH 30.—**St. Helens.**—PIPES.—Supply of about 220 tons of 21 in. diameter cast-iron pipes and specials, to the T.C. Mr. A. W. Bradley, Borough Engineer, St. Helens.

MARCH 31.—**Alnwick.**—BRIDGE.—Reconstruction in ferro-concrete of Hawkhill Bridge, near Alnwick, span 52 ft., width 30 ft. Mr. J. A. Bean, County Surveyor, Moot Hall, Newcastle-on-Tyne.

MARCH 31.—**Frimley.**—BRIDGE WIDENING.—For widening Frimley Bridge over the Blackwater, for the Southampton C.C. Mr. W. J. Taylor, County Surveyor, The Castle, Winchester. Deposit, £1 1s.

MARCH 31.—**Manchester.**—VALVES, WEIGHBRIDGES, &C.—Supply of (*a*) high-pressure steam and water valves, (*b*) weighbridges and automatic coal-weighing machines, to the Electricity Dept. Mr. S. L. Pearce, Chief Engineer, Dickinson-street, Manchester. Deposit £1 1s.

APRIL 1.—**Bristol.**—SHED.—Reconstruction of the single-floor transit shed, known as Shed "I," situate on the east side of Avonmouth Dock, for the Dock Board. Mr. Thomas A. Peace, Engineer, Docks Engineer's Office, Avonmouth Docks, Bristol. Deposit £5.

APRIL 1.—**Manchester.**—HEATING PLANT.—Supply of one calorifier and pump for hot water, heating, and circulation at the Crumpsall Institution, for the Board of Guardians. Mr. Hargreaves, Superintendent of Works, Union Offices, All Saints', Manchester.

APRIL 2.—**Maryport.**—GASHOLDER.—Supply and erection of a gasholder and two Livesey washers, for the U.D.C. Mr. A. T. Harris, Gas Works, Maryport.

APRIL 4.—**Saxmundham.**—BRIDGE.—Reconstructing in ferro-concrete Langham Bridge, in the parishes of Farnham and Blaxhall, 4 miles from Saxmundham. Waterway 38 ft. 6 in. in two equal spans; roadway, 12 ft., for the East Suffolk C.C. Mr. H. Miller, County Bridge Surveyor, Ipswich.

APRIL 6.—**Bickley.**—RESERVOIR.—Construction of covered service reservoir at Bickley, Kent, for the Metropolitan Water Board. Offices of the Board, Chief Engineer's Dept. (Room 201), Rosebery-avenue, Clerkenwell, E.C. Deposit, £10.

APRIL 7.—**Manchester.**—PIPES AND CRANES.—Supply of (*a*) high-pressure steam and water pipes, &c., (*b*) electric and hand operated cranes to the Electricity Dept. Mr. S. L. Pearce, Chief Engineer, Dickinson-street, Manchester. Deposit, £1 1s.

APRIL 9.—**Southampton.**—STEAM ROLLER.—Supply of 10 ton compound steam roller and scarifier, for the T.C. Borough Engineer, Southampton.

APRIL 12.—**Leeds.**—LABOUR.—Supply of electrical engineering labour-in-day-work in the Leeds district, for H.M. Commissioners of Works. Director of Contracts, H.M. Office of Works, Storey's-gate, S.W.

APRIL 13.—**Durham.**—TUNNELLING.—Construction of two tunnels under the Stanhope and Muggleswick Commons, and of the total length of about three miles, together with the shaft boring and other works connected therewith, for the Durham County Water Board. Messrs. T. & C. Hawksley, Civil Engineers, 62, Broadway, Westminster, S.W. 1. Deposit, £3 3s.

APRIL 13.—**Madras.**—CHLORINATING PLANT.—Supply and delivery of an experimental chlorinating plant capable of producing about 10 lbs. of available chlorine per day and applying it to the Madras City Water Supply. Messrs. James Mansergh & Sons, Agents to the Corporation, 5, Victoria-street, Westminster, S.W.1. Charge, 5s.

APRIL 18.—**London.**—TRAM RAILS.—Supply of 5,500 tons of standard steel girder tramway track rails, &c., for the L.C.C. Chief Engineer, County Hall, Spring Gardens, S.W. Deposit, £2.

APRIL 18.—**Montevideo.**—BRIDGE.—Construction of superstructure of bridge over the Santa Lucie River, for the Ministry of Public Works. Enquiry Office, Department of Overseas Trade, 35, Old Queen-st., S.W.

APRIL 21.—**Hong Kong.**—PUMPING MACHINERY.—For supply and setting to work at Taitam Tuk Works, Hong Kong, of vertical rotary steam pumping engine capable of lifting three million gallons per day a vertical height of 400 feet, two Lancashire boilers, superheaters, fuel economiser, feed pumps, pipe work, valves, and all accessories and auxiliary plant, for the Public Works Dept. Chief Engineer at the Offices of the Crown Agents for the Colonies, 4, Millbank, Westminster. Deposit, £5.

MAY 2.—**South Africa.**—GRAIN ELEVATORS.—Construction of (*a*) one terminal grain elevator at Cape Town, capacity 30,000 tons of 2,000 lbs.; (*b*) one terminal grain elevator at Durban, capacity 42,000 tons of 2,000 lbs.; (*c*) 34 country elevators, ranging in capacity from 1,800 to 5,800 tons of 2,000 lbs. High Commissioner for the Union of South Africa, 32, Victoria-street, London. Deposit £100.

MAY 31.—**Bombay.**—WATER WORKS.—Construction of about 105 miles of steel and reinforced concrete pipe lines (from 72 in. to 57 in. diameter), and contingent works, for the Corporation. Messrs. Taylor & Sons, consulting engineers, 36, Victoria-street, Westminster, London, S.W. Deposit, £2 each specification (8).

JUNE 8.—**Clapton.**—PUMPING MACHINERY.—Supply and erection of pumping machinery at Lea Bridge, Clapton, N.E., for the Metropolitan Water Board. Chief Engineer's Department, 173, Rosebery-avenue, Clerkenwell, E.C.1. Deposit, £3 3s.

JUNE 15.—**Walton-on-Thames.**—PUMPING MACHINERY.—Supply and erection of pumping machinery near Walton-on-Thames, Surrey, for the Metropolitan Water Board. Mr. Henry E. Stilgoe, Chief Engineer, Offices, Rosebery-avenue, E.C. Deposit, £5.

JUNE 20.—**China.**—BRIDGE.—The Peking-Hankow Line (Chinese Government Railways) invites sealed proposals for designing and building a new steel bridge, about 2,800 metres in length, across the Yellow River (Hoangho). Plans, &c., by telegraph from the following offices: Peking-Hankow Railway, Peking, China; Chinese Legation, London; British Legation, Peking, China. Deposit £6.

ROAD, SANITARY, AND WATER WORKS.

MARCH 25.—**Dundee.**—PLUMBING.—Execution of plumber-work required at extensions to docks substation. Drawing Office, Carolina Port, Generating Station, Dundee.

MARCH 28.—**East Riding of Yorks.**—ROADS.—For widening and reconstructing Hessle-road (part of), for the East Riding C.C. County Surveyor, Beverley. Deposit, £5.

MARCH 28.—**Simla.**—WATERWORKS PLANT.—Supplying, erecting and running for one month a new pumping plant, consisting of three units and steel rising mains, &c., with all fittings for the water supply, for the Simla Municipality. Mr. A. F. Hendersen, c.o. Messrs. Henry S. King & Co., Cornhill, E.C. Charge £1.

MARCH 29.—**Basingstoke.**—ROADS.—For steam road rolling, for the R.D.C. Mr. R. Forrester, surveyor, Chequers-road, Basingstoke.

MARCH 29.—**Salford.**—SEWERING, &C.—For sewering, rock asphalting, and flagging works, for the T.C. Borough Engineer, Town Hall, Salford.

MARCH 30.—**St. Helens.**—WATER MAINS.—Laying of about 1,018 lineal yards of 21 in. diameter cast-iron water pipes, &c., for the T.C. Mr. A. W. Bradley, Borough Engineer, St. Helens. Deposit, £2.

MARCH 31.—**Dunbar.**—WATERWORKS.—Constructing filters and service reservoir, and laying and jointing cast iron pipes and other relative works, for the T.C. Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit £1.

MARCH 31.—**Salford.**—STREET WORKS.—For excavating and pitching streets in connection with the housing schemes of the Corporation. Borough Engineer, Town Hall, Salford.

MARCH 31.—**Wealdstone.**—EXCAVATION, &C.—For necessary works in connection with making up and providing proper means of lighting of a section of Drill Hall-road, for the U.D.C. Mr. H. Walker, Surveyor, Council Offices, Peel-road, Wealdstone. Deposit, £1.

APRIL 5.—**Gosforth.**—ROADS AND SEWERS.—For laying sewers and forming roads, &c., on the housing site at Coxlodge, for the U.D.C. Mr. Geo. Nelson, surveyor, Council Chambers, Gosforth.

APRIL 7.—**Hexham.**—WATER SUPPLY.—Laying water pipes, &c., for additional water supply from the Park allotment to Bridge End, Allendale, for the R.D.C. Mr. J. H. Nicholson, Clerk, Barclay's Bank Chambers, Hexham.

APRIL 9.—**Failsworth.**—ROADS, &C.—Street making and sewerage works required in connection with the No. 1 Section of the housing scheme, of the U.D.C. Mr. George H. Fletcher, architect, 349, Oldham-road, Failsworth. Deposit, £2 2s.

✱APRIL 11.—**Hendon.**—RECONSTRUCTION OF ROAD.—Reconstruction of parts of Edgware-road for the U.D.C. Work comprising the following or thereabouts:—4,440 yds. linl. of new 6 in. by 12 in. Norway granite kerb; 22,000 yds. super of 3 in. by 4 in. creosoted deal blocks paving on reinforced concrete foundation; 2,400 yds. supl. 2 in. artificial stone paving; 5,000 yds. supl. 3 in. limestone tar paving; 1,428 yds. linl. 6 in. stoneware pipe drain; 820 yds. linl. 4 in. stoneware pipe drain; with all other works connected therewith. Mr. A. O. Knight, A.M.I.C.E., Engineer and Surveyor to the Council, Town Hall, Hendon, N.W.4. Deposit, £10 10s.

APRIL 11.—**Lenham.**—SEWAGE DISPOSAL WORKS.—Construction of sewage disposal works at Lenham Sanatorium, situated about 2¼ miles from Lenham Station, for the Kent C.C. Messrs. Shenton & Easdale, of 28, Victoria-street, London, S.W. Deposit £2.

✱NO DATE.—**Ickleford.**—WATER MAINS, &C.—For providing and laying about 320 yards of 3 in. water mains and 320 yards of steam tubing, with valves, hydrants, meters, &c., for Hitchin R.D.C. Mr. A. E. Passingham, Clerk, 5, Bancroft, Hitchin.

NO DATE.—**Orsett.**—SEWERS.—For construction of sewage disposal works in the parish of Aveley for the R.D.C. Mr. J. Beck, Clerk, 2, Orsett-road, Grays. Deposit, £3 3s.

Auction Sales, Tenders, etc.

MARCH 30.—**Chatham.**—Messrs. Presnails (J. Presnail, F.S.I.) will sell thirty huts, comprising 17 dormitory huts, cook house, scullery and stores, ablution hut, bath house and drying rooms, at East Camp, near R.N. Barracks. Auctioneers, 323, High-street, Chatham.

MARCH 31.—**London, W.**—Messrs. Knight, Frank, & Rutley will let by auction, with immediate possession, Poland-street Workhouse, in the Hanover-square Estate Room, at 2.30 p.m. Auctioneers, 20, Hanover-square, London, W.1.

✱MARCH 31.—**Sussex.**—Messrs. Harris & Gillow will sell at No. 3 Battn. Lines, Shoreham Camp, Shoreham-by-Sea, Sussex, camp buildings in timber and corrugated iron. Auctioneers, Harris & Gillow, 21, North Audley-street, Grosvenor-square, London, W.1.

APRIL 4.—**Falmouth.**—MARKET SITE.—For sale by tender: Freehold site adjoining municipal buildings and free library, area 1,150 square yards. Mr. W. H. Lupton, Town Clerk, Borough of Falmouth.

✱APRIL 5.—**Lambeth, London, S.E.**—Messrs. Veryard & Yates will sell, at 10A, Hartington-road, South Lambeth, building plant and materials. Also at the "Swan Hotel," Stockwell, April 6, about 150 standard best quality nearly new imported timber and building materials. Auctioneers, 365, Norwood-road, S.E. 27.

APRIL 5.—**Liverpool.**—Messrs. Joseph Hibbard & Sons will sell by auction, at the Yard, 40, Primrose-road, Bootle, dry stock of English and imported timber, including 6,500 ft. S/E and other Dutch elm, 80,000 ft. S/E and other plain oak, &c.; also saw mill machinery. Auctioneers, Newington Green, Islington, London, N.16.

Competitions.

(*See Competition News, page* 363.)

Public Appointments.

MARCH 25.—**Kettering.**—Clerk of Works required by the R.D.C. in connection with their housing scheme. Mr. Fredk. W. Stowe, Clerk, George-street, Kettering.

MARCH 28.—**Teignmouth.**—General Foreman required by the U.D.C. in the Surveyor and Waterworks Engineer's Dept. Mr. F. W. Knight, Surveyor and Waterworks Engineer, Town Hall, Teignmouth.

MARCH 31.—**Connah's Quay.**—Clerk of Works required by Connah's Quay U.D.C. in connection with construction of roads, sewer work and erection of 156 houses. Mr. A. J. Mothersole, Clerk, Connah's Quay U.D.C. Council Offices, Connah's Quay.

MARCH 31.—**Stoke-on-Trent.**—Clerk of Works required by the Corporation in connection with housing scheme. Mr. A. Burton, Borough Surveyor, Town Hall, Stoke-on-Trent.

✱APRIL 10.—**Clapham, S.W.**—Visiting Teacher of Plumbing (qualified to undertake lecturing, drawing and practical workshop instruction, and holding the City and Guilds of London Honours Certificate in theoretical and practical plumbing) at the School of Building, Ferndale-road, Clapham, S.W. 4. Education Officer (T.I.A) Education Offices, Victoria Embankment, W.C. 2.

✱APRIL 11.—**Cardiff.**—Clerk of Works required at the City of Cardiff Mental Hospital, Whitechurch-road, near Cardiff, by the City of Cardiff Corporation. Mr. Cecil G. Brown, Town Clerk, City Hall, Cardiff.

APRIL.—**London, N.**—Required in April next an Assistant Master (part time) for practical plumbing and sanitation, with possible full time. Mr. H. P. Shallard, The Polytechnic, N. 15.

Building Trade Wages.

At a mass meeting of the London District Council of the National Federation of Building Trade Operatives, held at Hammersmith on Sunday last, Mr. J. Murrey (Secretary of the London District Council) and Mr. R. Coppock (Secretary of the National Federation) recommended the operatives to accept the scheme for the regulation of wages in the industry on a sliding scale, according to the rise or fall of the cost of living.

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue, various prices have been revised.—Ed.]

BRICKS, &c.

	£ s. d.
Per 1,000 Alongside, in River Thames up to London Bridge.	
Best Stocks	5 1 6
Per 1000, Delivered at London Goods Stations.	
	£ s. d.
Flettons	3 17 0
Best Stourbridge Fire bricks	12 14 0
GLAZED BRICKS—	
Best White, Ivory, and Salt Glazed Stretchers	29 10 0
Headers	29 0 0
Quoins, Bullnose and 4½in. Flats	36 0 0
Best Pressed Staffordshire	12 4 0
Do. Bullnose	12 14 0
Blue Wire Cuts	10 6 6
D'ble Str'tch'rs	38 0 0
D'ble Headers	35 0 0
One Side and two Ends	39 0 0
Two Sides and one End	40 0 0
Splays and Squints	37 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.	
Thames Ballast	18 6	per yard, delivered 2 miles radius Paddington.
Pit Sand	24 0	" "
Thames Sand	25 0	" "
Best Washed Sand	25 0	" "
¾ in. Shingle for Ferro-Concrete	24 6	" "
½ in. " "	25 6	" "

Per ton. delivered in London area.	£ s. d.	£ s. d.
Best Portland Cement	4 7 6	4 13 0

80/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	10 0
Best Ground Blue Lias Lime 3/12/6 at rly. depot.	

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 75s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 44s. 8d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 2½
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	3 5½
Do. do. delivered on road wagons at Nine Elms Depot	3 6½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 11½
Do. do. delivered on road wagons at above stations, per ft. cube	5 0½

White basebed, 3d. per ft. cube extra.
NOTE.—½d. ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.

YORK STONE, BLUE—*Robin Hood Quality.*

	s. d.
Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	16 0
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	10 0
6 in. rubbed two sides, ditto ..... "	11 2
3 in. sawn two sides slabs (random sizes) "	4 4
2 in. to 2½ in. sawn one side slabs (random sizes) ..... "	2 8
1½ in. to 2 in. ditto, ditto ..... "	2 3

HARD YORK—

	s. d.
Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	10 3
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	9 6
6 in. rubbed two sides ditto ..... "	11 6
4 in. sawn two sides slabs (random sizes) "	5 6
3 in. ditto, ditto "	4 6
2 in. self-faced random flags .. Per Yard Super	13 6

WOOD.

GOOD BUILDING DEAL.

Inches	£ s.	
4 × 11	64 0	per standard
4 × 9	60 0	"
4 × 8	48 0	"
4 × 7	46 0	"
3 × 8	48 10	"
3 × 7	46 0	"
2½ × 7	45 0	"
3 × 6	43 0	"
3 × 11	65 0	"
2 × 11	65 0	"
3 × 9	55 0	"
2½ × 9	55 0	"
3 × 4½	44 0	"
3 × 4	44 0	"

PLANED BOARDS.

1 × 11	70 0	"
1 × 9	60 0	"

PLAIN EDGE FLOORING.

Inches		
¾	37/6	per square
¾	40/-	"
1	48/-	"
1¼	60/-	"
1½	72/-	"

TONGUED AND GROOVED FLOORING.

Inches		
1	48/-	per square
1¼	60/-	"
1½	72/-	"

WOOD (*Continued*).

MATCHINGS (BEST).

Inches		
¾	35/-	per square
¾	39/-	"
1	50/-	"

BATTENS.

Inches	s. d.	
¾ × 2	4 9	per 100 ft.

SAWN LATHS.

Per bundle	0 5 9

Dry Wainscot Oak, per ft. super, as inch	0 3 6	to	0 4 0		
¾ in. do. do.	0 3 0	..	—		
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0 2 6	to	0 3 0		
Cuba Mahogany	0 4 0	to	0 4 6		
Teak (Rangoon, Moulmein or Java), per load	75 0 0	to	85 0 0		
American Whitewood planks, per ft. cube	0 18 0	to	1 4 0		
Best Scotch Glue, per cwt.	10 0 0	..	—		
Liquid Glue, per cwt.	5 8 0	..	6 15 0		

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	56 10 0
" "	22 by 12	46 0 0
First quality " "	22 by 11	42 10 0
" "	20 by 12	42 0 0
Best Blue Portmadoc	20 by 10	36 10 0
" "	18 by 10	29 10 0
First quality "	18 by 9	24 5 0
" "	16 by 10	22 15 0
" "	16 by 8	18 0 0

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	7 15 0
Ditto hand-made ditto	8 10 0
Ornamental ditto	7 7 6
Hip and valley tiles (per dozen)	0 15 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	£ s. d.
R. S. Joists, cut and fitted	28 0 0
Plain Compound Girders	30 0 0
" Stanchions	32 0 0
In Roof Work	36 0 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £15 net value delivered direct from works. 5 per cent. less above gross discounts, carriage forward if sent from London stocks.)

	Tubes. ½" to 2".	Tubes. 2¼" to 6".	Fittings. ½" to 2".	Fittings. 2¼" to 6".
Gas	—10	—15 ..	—17½	—25
Water	Net	— 6½ ..	—12½	—22½
Steam	+11½	+ 3½ ..	— 7½	—20
Galv'd Gas	+10	+ 5 ..	—10	—17½
" Water	+22½	+16½ ..	— 5	—15
" Steam	+35	+27½ ..	Net	—12½

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts.	6 4	4 6	5 5
2½ in. "	7 3½	4 11½	6 9
3 in. "	9 0½	5 5	8 1
3½ in. "	10 0	6 9	9 5½
4 in. "	10 11½	7 8	10 9½

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts. plain	5 6	3 2	4 0
2½ in. " "	6 0	3 6	4 10
3 in. " "	7 3	4 4	6 6
3½ in. " "	8 9	5 2	7 6
4 in. " "	9 0	6 3	9 3

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices.
per yd.: 4 in., 13/-. .. 5 in., 16/6. .. 6 in., 19/11.

	Per ton in London. £ s. d.		£ s. d.
IRON— Common Bars	27 10 0	to	28 10 0
Staffordshire Crown Bars good merchant quality	28 0 0	..	29 0 0
Staffordshire "Marked Bars"	30 10 0	..	32 10 0
Mild Steel Bars	24 0 0	..	26 0 0
Steel Bars. Ferro-Concrete quality, basis price	24 0 0	..	26 0 0
Hoop Iron, basis price	31 0 0	..	33 0 0
" " Galvanised	46 0 0	..	48 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	30 0 0	..	32 0 0
" " " 24 g.	31 0 0	..	33 0 0
" " " 26 g.	33 0 0	..	34 0 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6ft. by 2ft. to 3ft. to 20 g.	38 0 0	..	39 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 22 g. and 24 g.	39 0 0	..	41 0 0
Ordinary sizes, 6ft. by 2ft. to 3ft. to 26 g.	41 0 0	..	43 0 0
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9ft. 20 g.	29 0 0	..	30 0 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Ordinary sizes, 6ft. to 9ft. 22 g. and 24 g.	30 0 0	..	31 0 0
Ordinary sizes, 6ft. to 9ft. 26 g.	32 0 0	..	34 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6ft. by 2ft. to 3ft. to 20g. and thicker	38 0 0	..	39 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	39 0 0	..	40 0 0
Best Soft Steel Sheets, 26 g.	40 0 0	..	41 0 0
Cut Nails, 3in. to 6in. (under 3in. usual trade extras.)	33 0 0	..	34 0 0

LEAD, &c.

	Delivered in London. £ s. d.		
LEAD Sheet, English, 4 lb. and up	32 10 0	..	—
Pipe in coils	33 0 0	..	—
Soil Pipe	35 10 0	..	—
Compo pipe	36 10 0	..	—

NOTE—Country delivery, 30s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	15 0 0	..	—
Do., ex country, carriage forward per ton	16 0 0	..	—

COPPER— Strong Sheet per lb.	0 2 3	..	—
Thin " "	0 2 4	..	—
Copper nails "	0 2 3	..	—
Copper wire "	0 2 4	..	—
TIN—English Ingots "	0 2 0	..	—
SOLDER—Plumbers' "	0 1 0	..	—
Tinmen's "	0 1 3	..	—
Blowpipe "	0 1 5	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

	Per Ft.		Per Ft.
15 oz. fourths	4½d.	32 oz. fourths	9½d.
" thirds	5d.	" thirds	1/-
21 " fourths	6½d.	Fluted, Obscured and	
" thirds	7½d.	Enamelled Sheet.	
26 " fourths	8d.	15 oz.	7d.
" thirds	9½d.	21 "	9d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	5½d.
⅛ Rough rolled	6½d.
¼ Rough rolled	7½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	7½d.
Ditto, tinted	9½d.
Rolled Sheet	6½d.
White Rolled Cathedral	6½d.
Tinted do.	7½d.

Cast Plate is ½d. extra on the price of rough rolled.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes per gallon		0 3 1
" " " in barrels "		0 3 2
" " " in drums "		0 3 3
Boiled " in barrels "		0 3 7
" " " in drums "		0 3 9
Turpentine in barrels "		0 5 0
" in drums (10 gall.) "		0 5 3
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		58 10 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus" and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		84 0 0
Red Lead, Dry (packages extra) per ton		43 0 0
Best Linseed Oil Putty per cwt.		0 19 0
Filocol per cwt.		0 18 0
Size. X D Quality fkn.		0 5 9

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish Outside	0 15 0
Fine ditto ditto	0 17 2
Fine Copal ditto	1 1 6
Pale Copal ditto	1 2 6
Pale Copal Carriage ditto	1 4 6
Best ditto ditto	1 14 6
Floor Varnish Inside	0 19 0
Fine Pale Paper ditto	0 18 0
Fine Copal Cabinet ditto	1 2 6
Fine Copal flatting ditto	1 0 6
Hard drying Oak ditto	0 18 0
Fine Hard drying Oak ditto	0 19 0
Fine Copal Varnish ditto	1 0 6
Pale ditto ditto	1 2 6
Best ditto ditto	1 14 6
Best Japan Gold Size	0 12 6
Best Black Japan	0 18 0
Oak and Mahogany Stain (water)	0 17 6
Brunswick Black	0 11 0
Berlin Black	0 16 6
Knotting (patent)	1 16 0
French and Brush Polish	1 8 0
Liquid Dryers in Terebine	0 18 6
Cuirass Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

CURRENT PRICES FOR BUILDING WORK IN LONDON.*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	22	0
Add if in clay	" "	2	0
Add for every additional depth of 6 ft.	" "	1	6
Planking and strutting to trenches	per foot super	0	7½
Do. to sides of excavation, including shoring	" "	1	6

CONCRETOR.

		s.	d.
Portland cement concrete in foundation 1 to 6 ..	per yard cube	55	0
Add if in underpinning in short lengths	" "	10	0
Add if in floors 6 in. thick	" "	4	0
Add if in beams	" "	5	0
Add if aggregate 1 : 2: 4	" "	15	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	4	6

BRICKLAYER.

		£	s	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	50	15	0
Add if in stocks	"	12	10	0
Add if in Staffordshire blues	"	34	10	0
Add if in Portland cement and sand	"	4	15	0

FACINGS.

		s.	d.
Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0 1½

POINTING.

		s.	d.
Neat flat strucks or weathered joint.....	" "	0	0 3½

ARCHES.

		s.	d.
Extra only to the price of ordinary brickwork :—			
Fair external in half brick rings	" "	0	1 0
Axed in stocks	" "	0	2 0
Rubbed and gauged jointed in putty camber or segmental	" "	0	7 0

SUNDRIES.

		s.	d.
Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1 8
Setting ordinary register grates and stoves	each	1	5 0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	6	15 0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	9	0
Three-quarter-inch vertical damp course	" "	14	3
One inch on flats in two thicknesses.....	" "	12	0
Angle fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	6

MASON.

		s.	d.
York stone templates fixed	per foot cube	22	0
York stone sills fixed	" "	35	0
Bath stone and all labour fixed	" "	16	9
Portland stone fixed	" "	26	0

SLATER.

		s.	d.
Welsh 16 in. × 8 in. 3 in. lap, including nails....	per square	98	0
Do. 20 in. × 10 in. Do. Do.	"	115	0
Do. 24 in. × 12 in. Do. Do.	"	117	6

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates .....per foot cube		9	0
Do. joists	" "	10	0
Do. roofs, floors and partitions	" "	11	3
Do. trusses	" "	13	6

		¾"	1"	1¼"	1½"
Deal rough close boarding	per sq.	60/–	81/–	100/–	108/–

		s.	d.
Flat centering for concrete floor, including struts or hangers .. "		68	0
Do. to beams .....per ft. sup.....		1	10
Centres for arches ..... "		2	4
Gutter boards and beams..... "		1	9

FLOORING.		¾"	1"	1¼"	1½"
Deal-edges shot	per sq.		82/–	104/–	120/–
Do. tongued and grooved	"		88/–	110/–	127/–
Do. matchings	"	74/–	89/–		
Moulded skirting, including backings and grounds .....per ft. sup.		2/4	2/8	3/2	3/8

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super	2	0
Two Do. Do. Do.	" "	2	6
Add for fitting and fixing	" "	0	6
Deal-cased frames with 1 in. inner and outer linings, 1½ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares double hung, double hung with pulleys, lines and weights; average size.....	" "	5	6

DOORS.		1¼"	1¾"	2"
Two-panel square framed .....per ft. sup.		2/8	2/11	3/1
Four-panel Do.	"	3/–	3/4	3/7
Two-panel moulded both sides	"	3/4	3/7	3/10
Four-panel Do. Do, ...	"	3/8	3/11	4/2

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated ..... per foot cube		22	0

		1"	1¼"	1½"
Plain deal jamb linings framed	per ft. sup.	2/3	2/5	2/9
Deal shelves and bearers	"	2/–	2/2	2/3
Add if cross tongued	"	2d.	2d.	2d.

STAIRCASES.

		1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets		3/4	4/–	4/8	—	—
Deal strings wrot in both sides and framed	"	4/6	4/9	—	—	—

		s.	d.
Housings for steps and risers	each	1	0
Deal balusters, 1 in. × 1¼ in.	per ft. run.	0	9
Mahogany handrail; average 3 in. × 3 in.	" "	6	3
Add if ramped	" "	12	6
Add if wreathed	" "	25	0

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	9d.	Rim locks	2/6
Sash fasteners	1/–	Mortice locks	5/6
Casement fasteners	1/6	Patent spring hinges and letting in to floor and making good 20/-	
Casement stays	1/3		
Cupboard locks	1/6		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	32	0
Plain compound girders	"	36	0
Do. stanchions	"	39	0
In roof work	"	43	0

RAIN-WATER GOODS.

		3"	4"	5"	6"
Half-round plain rebated joints ..	ft. run	2/–	2/6	3/9	4/3
Ogee Do. Do. ..	"	2/6	3/3	4/–	5/–
Rain-water pipes with ears	"	2/11	3/9		
Extra for shoes and bends	each	4/7	6/3		
Do. stopped ends	"	2/–	2/6	3/9	4/3
Do. nozzles for inlets	"	2/3	2/9	4/–	4/6

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	59	0
Do. Do. in flats	"	54	0
Extra labour and solder in coated cesspools	each	7	9
Welt joint	per ft. run.	0	6
Soldered seam	" "	2	1
Copper nailing	" "	0	8

		½"	¾"	1"	1½"	2"	4"
Drawn lead waste	per ft. run	1/–	1/8	1/11	3/5	4/3	
Do. service	"	1/7	2/1	2/6	4/–		
Do. soil	"						6/10
Bends in lead pipe	each					3/7	9/–
Soldered stop ends	"	1/4	1/10	2/3	3/2	3/10	
Red lead joints	"	1/–	1/2	1/5	2/1	2/8	5/5
Wiped soldered joints	"	3/2	3/10	4/6	5/5	7/2	10/10
Lead traps and cleaning screws	"				16/2	21/7	
Bib cocks and joints ..	"	7/6	11/3	18/–	48/–		
Stop cocks and joints	"	18/–	20/–	30/–	75/–		

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	3	4
Do. Do. Sirapite	" "	3	9
Do. Do. Keen's	" "	5	0
Add sawn lathing	" "	2	0
Add metal lathing	" "	3	6
Portland cement screed	" "	2	11
Do. plain face	" "	4	9
Mouldings in plaster	per 1 girth	0	3
One-and-a-half granolithic pavings	per yard sup.	6	11

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	1	6
26 oz. Do.	" "	1	9
Obscured sheet	" "	1	11
⅛ in. rolled plate	" "	1	1½
⅛ in. rough rolled or cast plate	" "	1	2½
¼ in. wired cast plate	" "	1	9

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	1	6
Knotting and priming	" "	1	0
Plain painting 1 coat	" "	1	6
Do. 2 coats	" "	2	4
Do. 3 coats	" "	3	2
Do. 4 coats	" "	4	0
Graining	" "	3	0
Varnishing twice	" "	2	6
Sizing	" "	0	4
Flatting	" "	0	9
Enamel	" "	2	0
Wax polishing	per foot sup.	0	11
French polishing	" "	1	9
Preparing for and hanging paper	per piece	2/– to 5/–	

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10% on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C for Parish Council.

AYLESBURY.—Plans passed by T.C.: Additions to Royal Bucks Hospital; alterations to front entrance of the Market Theatre, for Market Theatre Co.; alterations to 12 and 14, Cambridge-street, for Messrs. Goodey & Lines.

BARNSLEY.—Mr. H. E. Byrne, of the Ministry of Health, has held an inquiry into the application of the Corporation for power to borrow £20,000 for the sewering of the Honeywell estate—part of the Corporation's housing scheme.

CROMER.—Plans passed by U.D.C.: Conversion of Leighton House into three houses, for Mr. Joseph Willis, and conversion of stable premises into two flats.

DOVER.—Plans passed by T.C.:—Additions, Court Cottage, Kearnsney-avenue, for Mr. H. E. Dane; alterations at "Old Endeavour," London-road.

ETON.—Plans passed by R.D.C.: Cottage at Denham for Miss Fountain; two bungalows at Taplow, for Mr. Ryall; bungalow at Langley, for Messrs. Stacey & Son; bungalow at Taplow, for Mr. Waters; garage at Gerrards Cross, for Mr. H. G. Wilson; two bungalows at Stoke Poges, for Mr. Tarrant; house in Stoke Poges, for Mr. Harse; bungalow at Burnham, for Mr. Hearn.

GLASGOW.—Linings granted at Dean of Guild Court: William Campbell, dyer, Williamwood, Kennishead—to erect a dwelling-house at Woodstock-drive, Merrylee; Herbert S. Harrison, Garturk-street—to erect a workshop there; Higginbotham Sick Poor Nursing Association, 209, West George-street—to make alterations at Brighton-place, Govan; William Beardmore & Co., Ltd., Parkhead—to erect a gangway at Hilton Gardens, Anniesland; Robert Duncan (Partick Foundry), Ltd., Partick—to make alterations to foundry buildings at Castlebank-street, Partick; Robert Limpitlaw and others, Neilston House, Tollcross—to restore factory destroyed by fire at Muslin-street, Bridgeton; Glasgow Education Authority—to erect temporary school at Finlay-drive, Dennistoun.

GRANTHAM.—Plans passed:—Additions, 42 and 43, Swinegate, for Messrs. Burton & Son; alterations to garage, 24, Union-street, for Messrs. W. B. Harrison & Sons; extension to petrol depot, Dysart-road, for Shell Marketing Co.

GREAT YARMOUTH.—Plans passed:—Three houses, Hamilton-road, for Messrs. J. Balls & Sons; new buildings at Britannia Pier, for the Britannia Pier Co.; Mansard roof at Cliff Hotel, Gorleston, for Mr. A. V. George.

HARROGATE.—At the last meeting of the T.C. it was resolved to apply to the Ministry of Health for sanctions to borrow sums of £1,344 and £1,434 for private street improvements. It was also reported that the Ministry of Health had given its sanction to a loan of £3,000 for the Market Hall improvements, including additional outside shops.

LONDON (BATTERSEA).—The L.C.C. recommends that the B.C. be allowed to borrow £2,985 for housing.

LONDON (BERMONDSEY).—The application of the B.C. for sanction to borrow £14,786 for paving purposes is before the L.C.C.

LONDON (BETHNAL GREEN).—Drainage plans passed by B.C.:—At 57, Nelson-street, by Messrs. P. J. Dixon & Parrish; at 176, Brady-street, by Messrs. W. & J. Stocks; paper waste store, to be erected on site in Digby-street and Digby-walk, by Messrs. Matthews & Spicer.

LONDON (FULHAM).—Drainage plans passed by B.C.: Mr. J. Mears, at Stamford Bridge Grounds; Mr. W. Lane, at Hammersmith Distillery, Distillery-lane; Messrs. Triggs & Co., at Elizabethan School, Broomhouse-road; Messrs. J. W. Falkner & Sons, at 99, 101 and 103, Chancellors-road.

LONDON (GREENWICH).—Consent has been given by the L.C.C. to the B.C. borrowing £15,402 for housing purposes.

LONDON (KENSINGTON).—Formal consent has been given by the L.C.C. to the B.C. borrowing £32,348 for housing purposes.

LONDON (LEWISHAM).—The L.C.C. has given its assent to the B.C. borrowing £45,023 for housing purposes.

LOWESTOFT.—Plans passed:—By Mr. R. Hacon, for two houses at Beccles-road; by Mr. H. J. Hacon for a house in Beccles-road; by T. Brown & Son for a garage in Whapland-road; by Mr. Cook for a bungalow in Beccles-road; and by Mr. H. Layton for a house in Yarmouth-road.

NESTON.—Plan passed: House for Mr. B. Jones.

OSSETT.—Plan passed: Conversion of property into four cottages, at Town End, for Mr. G. Lockwood.

SMETHWICK.—The Education Committee recommends the T.C. to make application to the Ministry of Health for permission to borrow £14,756 for the inclusive cost of the Holly Lodge estate for the provision of a secondary school in the borough, and a further £650 for the alteration and adaptation of the residence on that site to the immediate needs of a secondary school for girls.

SPILSBY.—Plans passed by R.D.C.: Timber bungalow at Hundleby, for Mr. J. W. Bossingham; house at Willoughby, for Mr. W. B. Raithby; bungalow from converted railway carriages at Chapel St. Leonards, for Mrs. Kent, Mansfield; conversion of army hut into bungalow at Chapel St. Leonards, for Miss Goodie, of Bingham.

SWANSEA.—Plans passed by T.C.:—House, Soar-terrace, Morriston, for Mr. W. Thomas; additions, Trewyddfa-terrace, for Mr. John Davies; business premises, Clase-road, Morriston, for the Swansea Co-operative Society, Ltd.; Bonded stores, Church-street, for the Swansea United Breweries Co., Ltd.; caretaker's rooms, Gloucester-place, for Messrs. Richards, Turpin & Co.; additions, 22, Waun-road, Morriston, for Mr. Thomas John; additions, 14, Morgan-street, for Mr. Loye; boiler house, &c., General Hospital, for the Hospital Committee; additions, Plas-y-coed-cottages, Morriston, for Mr. Oliver J. Hughes; oil tank, &c., Hafod Siding, for Shell-Mex, Ltd.; additions, Duke-street, for Mr. E. Hawkins; alterations, St. Nicholas Church, Gloucester-place, for Messrs. T. Morgan & Sons, Ltd.; additions, Ravenhill-road, Fforestfach, for Mr. John James.

TENTERDEN.—Plan passed:—Bungalow at Wittersham, for Mr. Butler.

WINDSOR.—Plans passed by T.C.: Alterations, "Herts Hotel"; alterations at "Castle Mead," for Lieut.-Col. Booker.

WOODBRIDGE.—The R.D.C. has decided to accept tenders for the erection of 30 houses in the district.

FIRES.

EDINBURGH.—The draper's shop occupied by Mr. Isaac Golden, in St. Patrick's-square, has been destroyed by fire.

HASTINGS.—A fire has occurred at Ye Olde Crown Inn, All Saints'-street, Old Town, one of the oldest licensed houses in the borough.

IRVINE.—A fire has occurred at Messrs. Green's Picturedrome, in Bank-street.

LINCOLN.—Damage estimated at between £15,000 and £20,000 has been done by fire at the premises of the Co-operative Society, High-street.

LAW REPORTS.

Artistic Amenities and Repairs.

At Tonbridge County Court, before Judge Parry, a case was recently heard in which a tenant sued the landlady of the house in which he resided during part of the year, at Edenbridge, for damages owing to the picturesque appearance of the house being destroyed by the removal of the cowl of an oast-house attached to the house, and which was used as a store and garage. Evidence was given for the defendant that the cowl had ceased to revolve, that the wood had become rotten, and that it had become dangerous. In giving judgment for the defendant, with costs, the judge said there was nothing in the lease to prevent the owner from damaging the picturesque value of a building when carrying out structural repairs. The cowl was part of the structure for which defendant was liable, and was in a dangerous condition. There was no law which put upon landlords the duty of preserving the amenities of buildings.

Zincing a Roof.

An action as to liability for damage caused when a firm of builders was zinc covering a roof was decided in the Shoreditch County Court recently by Judge Cluer. The plaintiff was Harris Silverstein, of Old-street, cabinet manufacturer, and he sued Messrs. L. Carter & Sons, of Earl's Court, to recover £100 damage alleged to have been caused to a quantity of furniture. Plaintiff alleged that when the zincing work was done the roof was uncovered at a time when rain was very probable, and a downpour damaged the furniture—he not having been told that the work was going to be done. Plaintiff valued the furniture at £230 5s. before the occurrence, and it had depreciated by £100. Counsel for the plaintiff submitted that if a builder exposed a roof, as had been done in this case, without giving the tenant a chance to protect his goods, then he was liable for the damage done. Judge Cluer gave judgment for the plaintiff for £41 15s. damages, and costs.

TRADE NEWS.

Messrs. Robert Jenkins & Co., Ltd., engineers and boiler-makers, of Rotherham, inform us that they have reduced the prices of the well-known "Eco" combination, with gas cooker, as follows:—Size 1, from £35 to £30; Size 2, from £40 to £33; Size 3, from £45 to £36. With electric oven the prices have been reduced as follows:—Size 1, from £40 to £35; Size 2, from £45 to £38; Size 3, from £50 to £42.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than Tuesday evening*.

*** Denotes *accepted*. † Denotes *provisionally accepted*.**
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

BEVERLEY.—For painting at 12 houses, to be erected by the T.C.:—

*R. T. Elwell	£233

BRENTFORD.—For the erection of 70 houses, for the U.D.C. Mr. W. J. W. Westlake, Surveyor and Engineer. Quantities by Messrs. Dodge & Reed, architects and surveyors, Brentford:—

Section No. 1—20 Houses—

‡Improved Concrete Construction Co., S.W. 1	£16,413 0 0

Section No. 2—20 Houses—

‡J. W. Ellingham, Dartford	18,305 0 0

Section No. 3—30 Houses—

‡W. H. Gaze & Sons, Ltd., Kingston	27,463 9 2

BROWNHILLS.—For the construction of sewerage works, for the U.D.C. Mr. Robert Green, M.Inst.C.E., engineer, 37, Waterloo-street, Birmingham:—

*M. A. Boswell, Wolverhampton.	

CHEPSTOW.—For erection of 10 cottages, for the R.D.C.:—

	One pair Type "A."	Two blocks of four Type "B."
*Reddin	£1,780 0 0	£3,170 0
Dawkins, Harris & Weever	2,267 0 0	10,195 0
E. Hobbs	2,147 10 9	10,026 11

CROUCH END.—For alterations at 21, Topsfield-parade, Crouch End, N.8. Messrs. Boyton & Co., surveyors, 317, High Holborn, W.C.:—

*J. Hickman, London	£348 15 0
Cookes, London	411 10 6
J. W. Cullen, Ltd.	401 3 6
S. G. Goulding, Hornsey	352 10 0
H. Jacobson, London	335 0 0
Parsons	330 0 0

CROYDON.—For repair and external painting required at the Croydon Sanatorium, North Cheam, Surrey, for the Croydon and District Joint Smallpox Hospital Board:—

*Roll, Epsom	£287 0 0
Edwards Construction Co., Blackheath	288 0 0
Brown, Ltd., Leatherhead	314 0 0
Tarrant, Ltd., Byfleet	370 0 0
Smith & Son, Sutton	374 18 9
Sayers & Son, Mitcham	373 15 0
Bartlett & Son, New Malden	382 0 0
Ranger, Weybridge	395 0 0
A. G. Wright, Purley	403 10 0
S. Dale, Mitcham	422 11 6
H. Tayson, Epsom	457 0 0
Gibson, Croydon	460 0 0
Mansell, Croydon	462 10 0
Walpole & Son, Sutton	465 10 0
Bacon & Son, Coulsdon	499 15 0
Dowart, Kensington	540 0 0
Bleach & Co., Norbury	591 15 0
C. King, Carshalton	595 0 0

DARTMOUTH.—For the erection of (*a*) a block of 12 flats at Higher-street, and (*b*) 22 houses at Avorys Meadow, for the B.C. Messrs. W. G. Coulthrey & Son, M.S.A., A.R.I.B.A., architects, 19, Palace avenue, Paignton:—

(*a*)—	
‡Anderson & Pillar, Dartmouth	£8,623 12 5
R. J. Narracott, Torquay	8,500 0 0
W. G. Row, Dartmouth	9,714 0 0
R. F. Yeo & Sons, Torquay	10,498 12 0
R. Pillar & Son, Dartmouth	13,553 0 0
(*b*)—	
R. F. Yeo & Sons, Torquay	22,309 12 7
W. G. Row, Dartmouth	23,317 0 0
Brake, Featherstone & Co., Barnstaple	23,932 0 0
Anderson & Pillar, Dartmouth	31,036 3 9

EASTWOOD.—For making up of three new roads at Eastwood housing site, for the U.D.C.:—

†E. Morley & Sons, Derby	£697 10 0
G. H. Greasley, Loughborough	810 0 0
Hodson's, Ltd., Nottingham	830 18 8
A. Jenner, Grantham	895 16 0
C. Tomlinson, S. Normanton	1,020 0 0
E. Somerfield & Sons, W. Bridgford	1,279 9 0
Radford & Sons, Derby	1,350 4 0

† Referred to Housing Commissioners.

GREENOCK.—For the erection of a new school for defective children, for the Renfrewshire Education Authority. Messrs. Stewart, Tough & Alexander, architects, Greenock:—

*J. & R. Kirk, Greenock (*Building work*).
*James Agnew & Son, Greenock (*Joiner work*).
*A. C. Fletcher, Greenock (*Plumber work*).
*Quinten Tannock, Greenock (*Plaster work*).

GREENOCK.—For the erection of a new block at Greenock Infirmary:—

*William Steele, Greenock (*Mason and brickwork*).
*W. S. Todd & Co., Greenock (*Joiner work*).
*John Crawford, Greenock (*Plumber work*).
*A. Murray, Greenock (*Plaster work*).
*D. Phillips & Son, Greenock (*Slater work*).
*Kincaid & Co., Greenock (*Electrical work*).

HARROGATE.—For construction of concrete floor at Electricity Works, for the T.C.:—

*Hymas	£1,496 14

* See also our List of Contracts, Competitions, etc.

HARROW-ON-THE-HILL.—For street improvement in Station-road, for the U.D.C. Mr. J. Percy Bennetts, surveyor; quantities by surveyor:—

*Wimpey & Co., Hammersmith	£988 15 11
R. H. Powis, Wembley	989 7 0
W. & C. French, Buckhurst-hill	1,017 15 9
C. F. Cole, Alperton	1,063 13 9
F. Mowlem & Co., London	1,096 13 3
Johnson & Langley, Leicester	1,153 2 2

HENSTEAD.—Erection of six houses at Newton Flotmen, for the R.D.C.:—

*J. Anderson & Sons, Norwich	£4,546 10

LONDON.—For fencing playground at George Green's School, Poplar, for the L.C.C.:—

*W. Hayward & Co.	£415 0
Hill & Smith	481 11
Stock & Collings	575 0

LONDON.—Supply of about 350,000 3 in. by 8 in. by 5 in. creosoted deal blocks required for the repaving of Cambridge-road, for the Bethnal Green B.C.:—

	Per 1,000.
*Burt, Boulton & Haywood, Ltd.	£25 10 0
Improved Wood Pavement Co., Ltd.	25 19 6
Wm. Griffiths & Co., Ltd.	26 0 0
Acme Flooring & Paving Co. (1904), Ltd.	26 10 0
Gabriel, Wade & English, Ltd. (a)	†30 0 0
Sir Wm. Burnett & Co., Ltd.	26 15 0

(a) for 3 in. by 9 in. by 5 in.
†Pro rata price for 8 in. blocks—£26 13s. 4d.

LONDON.—Extension of Harrow-road Weights and Measures Office, for the L.C.C.:—

*J. Garrett & Son, Balham	£3,448
Albert Monk, Edmonton	3,522
W. Lawrence & Son, Ltd., E.C. 2	3,690
Holloway Brothers (London), S.W. 1	4,321

MACCLESFIELD.—Erection of 110 houses and drainage and fences, for the T.C.:—

*Macclesfield & District Building Trade Employers' Association	£101,780

NORTHAMPTON.—For the erection of (a) 80 houses of brick construction on the Abington Lodge Estate, and (b) 8 houses on the Far Cotton Estate, for the T.C.

	Type.	Per pair.
Abington—		
W. C. Cockerill	1	£1,765
A. Glenn & Son	1	1,792
T. Wilson	2	1,755
Archer & Sons	2	1,780
G. R. King	3 S	1,683
King & Fox	3 S	1,690
G. F. Sharman	3 S	1,694
A. Glenn & Son	3 S	1,695
A. P. Hawtin & Sons, Ltd.	3 N	1,700
A. Glenn & Son	4 S	1,855
Throssell & Co.	4 S	1,860
A. P. Hawtin & Sons, Ltd.	4 N	1,870
Far Cotton—		
H. G. Allum	3	1,696
W. H. Samwell	3	1,704

(All of Northampton).

OSSETT.—For the erection of 28 houses on Horbury-road site, for the T.C.:—

*Ossett & Horbury Master Builders' Association	£26,577

SOUTHWICK.—For the works of draining, fencing and footpaths required in connection with the whole of the 44 houses proposed to be erected on housing sites Nos. 1 and 3 (extension):—

‡P. W. Gladstone, Wimbledon	£3,079
G. Percy Trentham, Ltd., London	3,056
J. Parsons & Sons, Hove	3,128
A. Streeter & Co., Ltd., Surrey	3,306
C. V. Buchan & Co., Ltd., Southwick	3,880

WIGTON.—For erection of 16 houses and construction of drains, &c., for the U.D.C.:—

*Lattimer	£12,187 16 6

NEW COMPANIES.

The particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd. Company Registration Agents, of 116 & 117, Chancery-lane, W.C.2, from the documents available at the Companies' Registry.

ARKWRIGHT BROTHERS (BLACKPOOL), LTD. (173,562). Registered March 8. 129, George-street, Blackpool. Plasterers, builders, contractors and stonemasons. Nominal capital, £1,000.

BUILDERS' ASSOCIATED MERCHANTS, LTD. (173,505). Registered March 4. Builders and contractors. Nominal capital, £1,000

CARRIER ENGINEERING CO., LTD. (173,567). Registered March 8. 24, Buckingham-gate, S.W. 1. Heating and ventilating engineers. Nominal capital, £25,000.

DILAPIDATIONS, LTD. (173,665). Registered March 12. 73, Red Lion-street, W.C. 1. Builders, decorators and general house repairers. Nominal capital, £100.

EXCELSIOR PATENT STONE CO., LTD. (173,476). Registered March 3. Finedon Sidings, Finedon, Wellingborough. Manufacturers and dealers in artificial stone. Nominal capital, £10,000.

FERRATE MANUFACTURING CO., LTD. (173,435). Registered March 1. Green Street-green, Farnborough, Kent. Builders, contractors, manufacturers of concrete and building materials. Nominal capital, £10,000.

JAMES E. SMITH, LTD. (173,363). Registered February 25. City Chambers, Broad-street Corner, Birmingham. Timber merchants. Nominal capital, £5,000.

The National Federation of Clerks of Works' and Builders' Foremen's Associations.

During the latter half of last year the National Federation of Clerks of Works' and Builders' Foremen's Associations of Great Britain and Ireland was initiated by two of the London Associations of Clerks of Works' and Builders' Foremen, comprising about 500 members. In February of this year further developments arose, necessitating a special conference of the Federation being held in London. To this conference were invited delegates from similar associations at Bristol, Birmingham and Cardiff, with the object of their becoming amalgamated with the Federation, and after discussion between these delegates and the London delegates it was unanimously decided that these three provincial associations should at once become federated with the Federation. Several associations of the allied building industries are in close touch with the Federation, with the idea of co-federation, but for the immediate present the purposes of the General Council seem to be to federate only with associations of clerks of works or builders' foremen.

The Rate of Bricklaying.

In the House of Commons last week, Dr. Addison was asked whether he was aware that operatives employed by the Building Guilds were laying 900 bricks per day, while on private contracts they would not lay more than 300, and replied: "There is considerable variation in the output of bricks obtained in various schemes. The Building Guilds state that they have obtained a high average in certain schemes, and the same is true of some contractors' schemes. I have no evidence that there is any such difference as suggested between the output obtained on Guild and other contracts. An increase of output from 300 to 900 bricks a day would be equivalent, on the average, to a saving of approximately two months in the time taken to complete the houses in a scheme, and to a saving in cost of about £70 a house. The number of Guild schemes is so small that it is difficult to compare them fairly with other building undertakings."

JOINERY,
Of every description and in any kind of Wood.
CHAS. E. ORFEUR, LTD.,
ESTIMATES ON APPLICATION.
COLNE BANK WORKS, COLCHESTER.
Telephone: 0198. Telegrams: "Orfeur, Colchester."

J. J. ETRIDGE, JR. LTD
SLATING AND TILING
SLATE MERCHANTS
CONTRACTORS.
Inspections and Reports made on
OLD OR FAULTY ROOFS
in any part of the country.
Telephone; Avenue 4940 (two lines), or write.
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

DRY JAPANESE
OAK FLOORING
READY FOR LAYING.
SYDNEY PRIDAY
25, Monument Street, E.C.3
Telephone Nos.: AVENUE 667 & 4817

War Memorials, Church Tablets, Celtic Crosses,
in Stone, Marble, or Granite. Designs Free.
MARBLE SHOPFITTINGS & STEPS
KELLY & CO.
(Cramb Bros.) Ltd.
129, Marylebone Road, N.W.1
Phone: "Padd. 5518."

ALL OUR CISTERNS, TANKS, and CYLINDERS

ARE BRANDED "SUN" BRAND.

TELEPHONE: Museum 3030 (5 Lines).
Chief Offices: 352 to 364, EUSTON ROAD, LONDON, N.W. 1.